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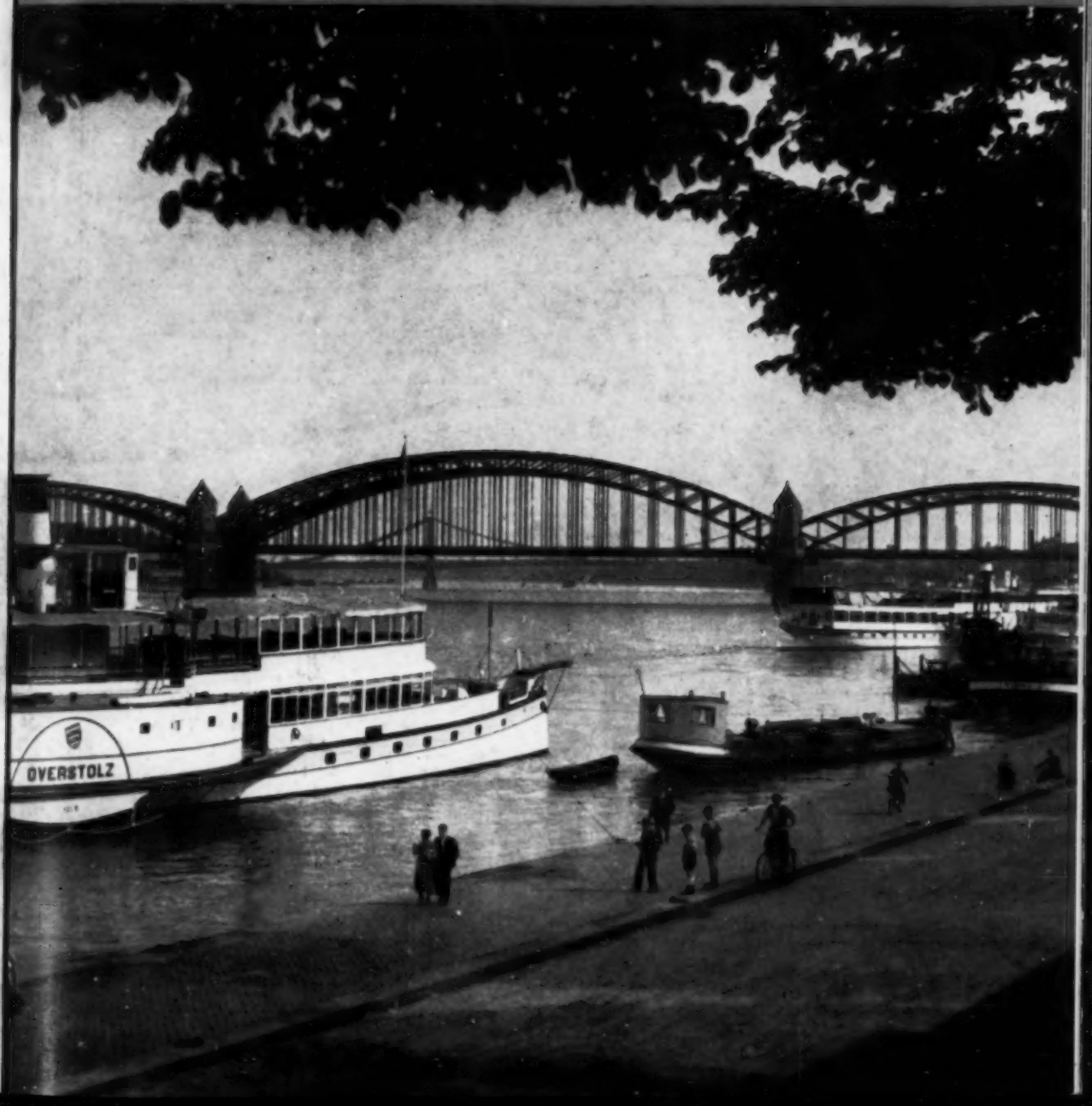

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The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

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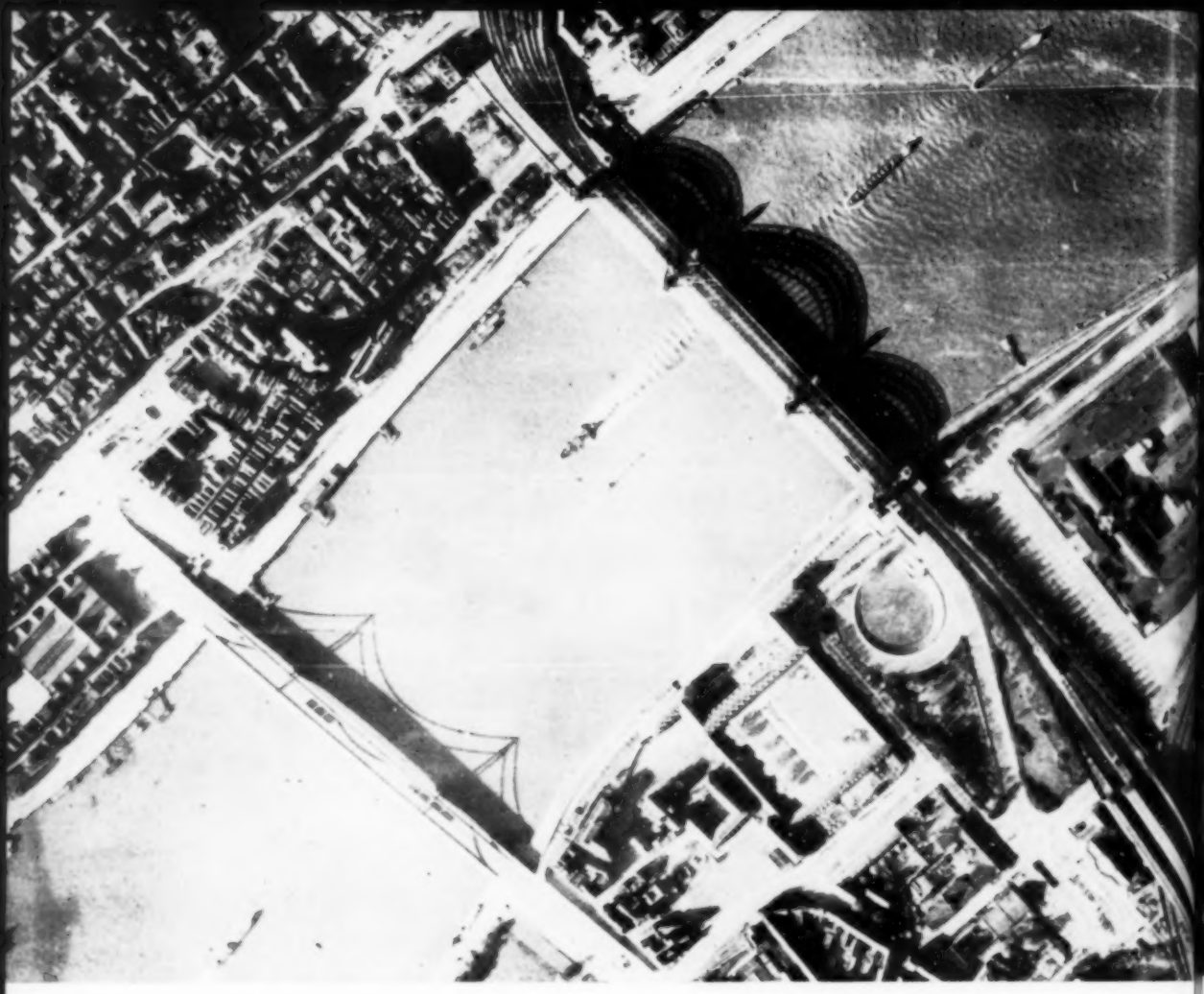


The Rhine — Barrier of Destiny

by PETER MATTHEWS*

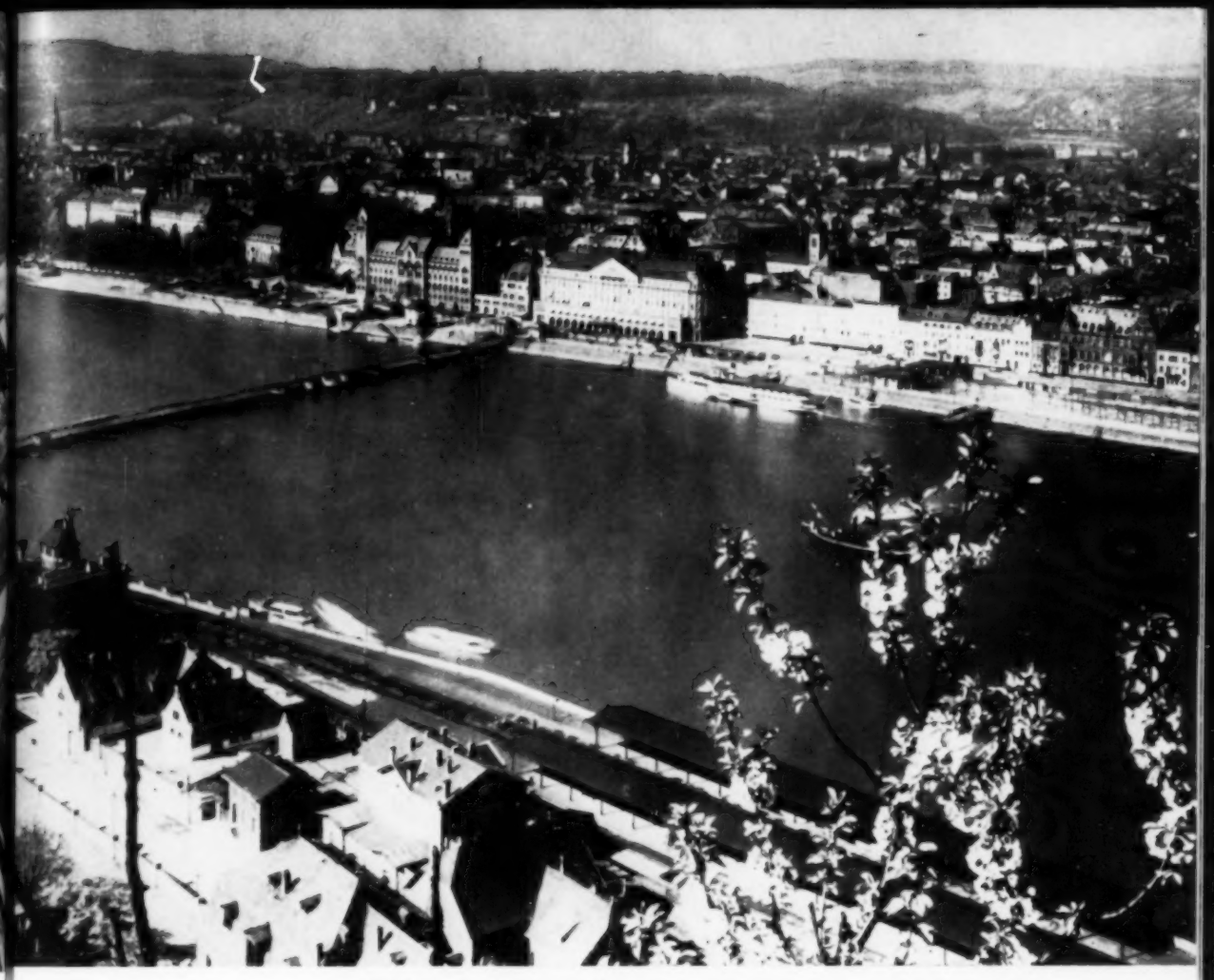
AGAIN and again, during the present war, the course of the fighting has shown the limitations of river barriers. A whole succession of such obstacles was crossed by the Germans in 1940, 1941 and 1942; in 1943 and 1944 the Russians re-crossed all the rivers which the Germans had forced during the first two years of the Soviet-German war. The final demonstration that water obstacles are not insuperable came on D-Day, and, in comparison with the English Channel, the Rhine can hardly now be accounted a formidable hindrance to the Allied armies.

Yet the defence of Stalingrad was made possible by the ability of the Russians to hold the Volga and prevent the encirclement of the city, and the Germans, both at Warsaw and at Budapest, have shown that a river barrier can be turned to good account—for a time at least. The experience of Stalingrad, Warsaw and Budapest suggests that a river barrier is most formidable in conjunction with a large built-up area.

When the Germans were driven from the greater part of France, it was plain that the Rhine would provide the basis, at least, of their next attempt to make a stand. There are stretches of the river where the country, through which it flows, rather than the river

At top:—Cologne. An air reconnaissance photograph of the road and rail bridges—of great strategic importance—linking Aachen and central Germany.

*Article prepared early in January, 1945



Coblenz on the River Rhine, Germany Copyright Miller Services, Ltd.

itself, renders it a strong defensive position. From Basle downstream, where the river forms the frontier between France and Germany, the Allies face behind the Rhine itself the formidable mountain region of the Black Forest. Although, along this stretch, the river flows through a relatively flat valley some twenty miles in breadth, and the gaining of a foothold on the enemy bank might not present very great difficulties, the German territory thus threatened is so difficult, and of so little economic importance, that an Allied crossing would have little value, either from a military or an economic point of view.

Grim Alsace Struggle a Pointer

Yet, even here, the Germans have fought bitterly to retain a foothold on the left bank, for the disadvantage of retreating to a river is that it protects the advancing army, as well as the retreating army, from attack. The stubbornness with which the Germans have been fighting in Alsace to prevent the Allies from reaching the river along the whole length of the Franco-German Rhine frontier is, no doubt, to be explained by their hopes of launching a counter-offensive towards the Belfort Gap.

Further downstream, where the valley narrows and the river flows through the Rhine gorges between Bingen and Coblenz, barely allowing room for railway lines and roads to follow its course, the barrier is even easier to defend. The ruined castles of the "robber barons" testify to the fact that the strategic possibilities of this part of the river were as apparent in the Middle Ages as they are to-day. But, as you move downstream, the strategic limitations of the

The Rhine at Godesberg, just below Cologne. Here, in a sweeping curve through undu... that Prime Minister Chamberlain met Hitler in Sept...

Rhine barrier become even more apparent. In fact, as General Eisenhower has told us, there is every reason to expect that the battle of Germany will be decided on the left bank of the Rhine, for, if Allied troops were to establish themselves firmly along the left bank from Basle to the point where the river enters Holland, the Reich would be deprived of a very great part of its war potential.

The cities of Karlsruhe, Mannheim, Ludwigshafen, Cologne and Düsseldorf, with many smaller towns, would be lost to the enemy as centres of war production—for those parts of them which were not actually occupied would be under Allied gunfire. The heavy industries of the Saar would be in Allied hands, and even the Ruhr basin, though it lies on the right bank of the Rhine, could be effectively paralysed by shellfire and air attack from forward bases within Germany.

Although the enemy might still retain other industrial areas in Silesia, the Bohemian "Protectorate", Austria and Central Germany, the effective occupation of the left bank would reduce Germany's capacity to produce war material to a fraction of its present dimensions. Moreover, the loss of Ruhr and Saar coal, and of the heavy industries dependent upon it, would have effects far beyond the regions directly paralysed by the Allied advance. In fact, the Allied air offensive has, to a large extent, been directed towards putting out of action those areas which would be lost to the enemy if the line of the Rhine could be reached.

Fateful Importance of Middle Rhine

There is another reason why it is vital for Germany to hold the Allies at arm's length from the Middle Rhine. It is one thing to supply large armies across the numerous Rhine bridges, but it would be quite another matter to withdraw those armies under Allied air (and, in the latter stages, artillery) attack. If the loss of the left bank would be a major disaster for Germany's war economy, the process of withdrawal across the river might well result in a military calamity as grave as the German defeat in western France.

Between the Upper Rhine, where it flows between Germany and France, and the point where it divides into the Waal and the Leck, the Germans have at their disposal the great network of roads and railways which were constructed expressly for the purpose of campaigning at, and across, Germany's frontiers with France and Belgium. Marshal

y, the river flows broad and fast—a formidable obstacle for any army. It was at Godesberg for the talks which led to the Munich Conference.

Foch pointed out, in 1919, when security arrangements for the Rhineland were under discussion at Versailles, that Germany's successful aggression in 1870, and her initial successes in 1914, had been possible because "at our gates, only a few days' march from our capital, Germany has at her disposal the most formidable offensive military base ever known in history".

Although, to-day, this "offensive military base" is being used by the Germans primarily for defensive purposes, the enemy can still profit from the care with which its road and rail system was created to serve strategic ends. Indeed, the initial success of the Rundstedt offensive owed a great deal to the German commander's ability to concentrate large forces in a short space of time.

Nine great railway transportation lines converge upon the Rhine bridges and continue on the left bank. This railway system, laid out in consultation with the military authorities, has been supplemented by the great Reich Motorways (Reichsautobahnen), and it is remarkable how many "new roads under construction" are shown in German maps of the Rhineland published just before the outbreak of the war. The great profusion of road and rail bridges on the section of the Rhine which passes through German territory was intended to facilitate the rapid movement of troops westwards to the frontiers of France and Belgium and to prevent any "bottlenecks" from developing during an invasion of these two countries. To-day, the fact that the Rhine can be crossed at some thirty points from Germany into Belgium and France makes extremely difficult a repetition of the tactics by which the Seine and Loire bridges were destroyed and the Normandy battlefield isolated.

Foch Knew the Danger in 1919

On the Middle Rhine, the issue at stake is not so much control of the river as control of the Rhineland itself. Foch recognized that, by holding bridgeheads on the east bank, France would be in a position to meet at any time a renewed threat from Germany. With a foothold on the German side of the river, it would be possible to intervene effectively, and at small cost, so soon as there was evidence of a German intention to rearm. The French occupation of the Ruhr in 1923, although generally regarded as unwise and unjustified by opinion in Britain at the time, showed how effective a sanction France could bring to bear upon Germany. But the implications of mastery on the Rhine were even more far-reaching than this. In 1919

Section of the Rhine viewed from bridge at Vianen, Holland. Copyright Miller Services, Ltd.

Foch wrote: "Supposing that Germany, mistress of the Rhine, were to wish to attack the Republic of Poland or the Republic of Bohemia; established defensively on the Rhine, she could hold in check (and for how long?) the Western Powers coming to the aid of the young republics, and the latter would be crushed before they could receive aid."

This truth was as apparent to Hitler as it had been to Foch, and the German reoccupation of the Rhineland, followed by the construction of the Siegfried Line, was the necessary preliminary to the overwhelming of "the Republic of Bohemia" at Munich and the subsequent attack on Poland. Mastery of the Rhine made it possible for Germany to "hold in check . . . the Western Powers coming to the aid of the young republics". Germany's success in 1938 and 1939, no less than the successful campaign of 1940 in the Low Countries and France, resulted directly from German mastery of the Rhine. The initial success of the Rundstedt offensive is but the latest example of the value to Germany of "the greatest offensive military base ever known in history". On the Middle Rhine, as on the Upper Rhine, the enemy, by retreating to the right bank, would sacrifice a position which is essential to him if he is to retain the opportunity for a counter-offensive.

One object of the Rundstedt offensive was undoubtedly to restore the situation created by the daring attack launched by the Allied First Airborne Army across the Waal, at Nijmegen, and towards the Leck, or Lower Rhine, at Arnhem. On the Upper Rhine, the Germans could afford to allow the Allies to reach the left bank of the river, since they were faced by the formidable obstacle of the Black Forest—but a crossing of the Lower Rhine might have decisive consequences, for here the Allies are faced, not by an easily-defended range of wooded mountains, but by the flat expanse of the North German Plain. Thanks to the exploits of the First Airborne Army, the Allies are already across the Waal, which carries two-thirds of the water of the Rhine, and they are faced only by the lesser obstacle of the Leck.

Airborne Menace to Lower Rhine

Despite the failure to seize the bridge at Arnhem—a failure which nevertheless contributed to the success at Nijmegen—the Allied airborne invasion of Holland may yet prove to have had strategic consequences of

Lorelei Rock—on the Rhine, Germany
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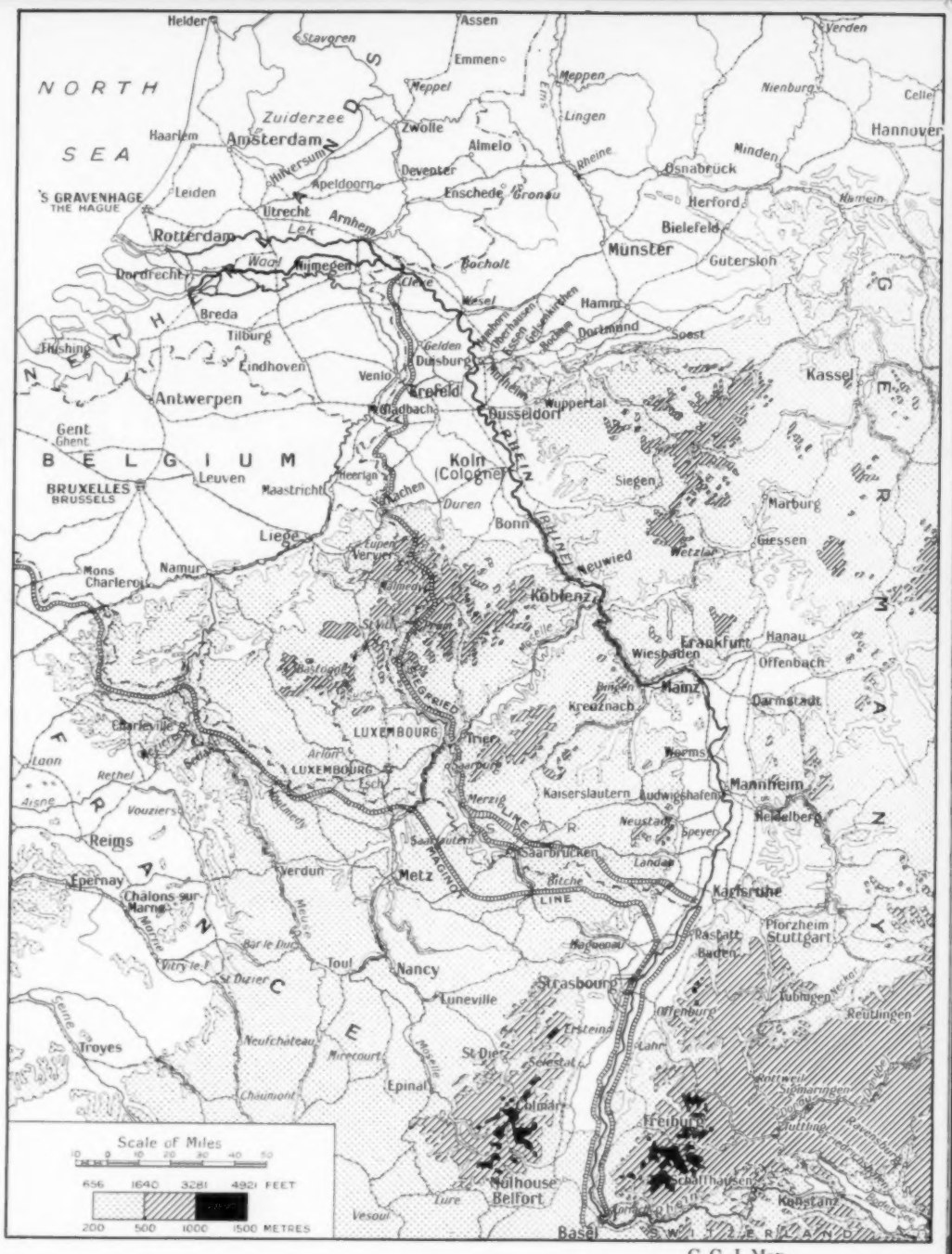


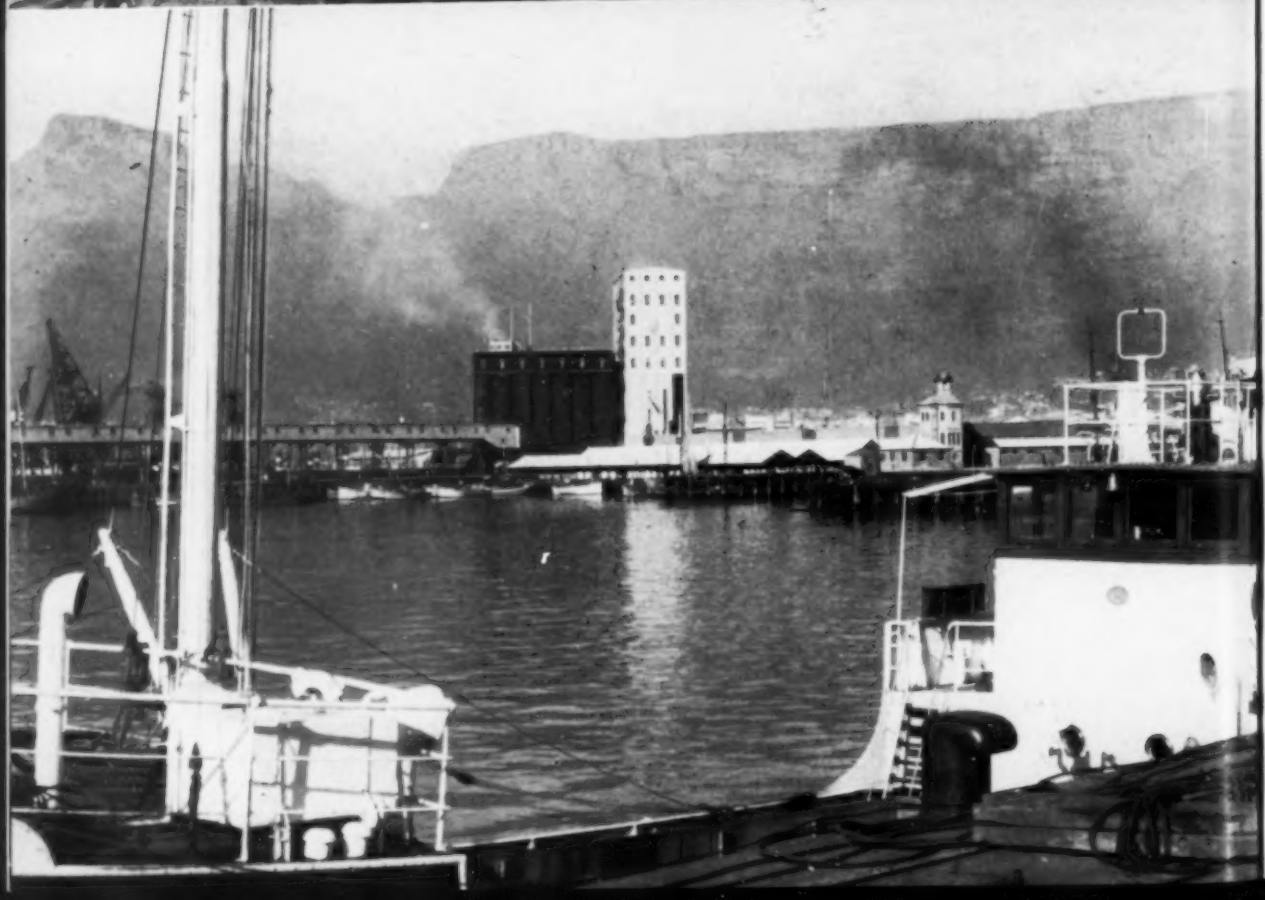
C. G. J. Map

the highest importance. For, when circumstances make a fresh offensive possible, the British Second Army's bridgehead over the Waal may provide a springboard for a fresh assault upon the barrier of the Lower Rhine, and such an assault, if successful, would turn the Rhine barrier altogether. If the airborne invasion failed to achieve all that was hoped of it, it nevertheless created a most serious threat to the whole German position on the Rhine.

In his dispositions, the enemy must take account of this threat. He is at present reported to be throwing up defence works with great energy, but can hardly hope to improvise, at short notice, any defences comparable to those of the Atlantic seaboard, which the Allies stormed across the water-barrier of the English Channel. A successful crossing of the Rhine at this point would give the Canadian and British forces of the 21st Army Group a choice of further objectives; they could strike towards the Zuyder Zee, cutting off the Rhine Delta, or they could strike at the Rhur. It is in this sector, and in this sector alone, that the Rhine constitutes the principal barrier to an Allied advance.

It will be seen that mastery of the Rhine determines the relations between France and Germany. After the last war, France sought to gain permanent control of the Rhine and, when this was refused by the Allies, she succeeded in securing the insertion into the Versailles Treaty of a provision whereby the left bank, and a strip of territory thirty miles wide on the right bank, were to be permanently demilitarized. In this way, the French hoped to prevent the Germans from staging a surprise attack based on the left bank which, if it was successful, would enable the Germans to seize the main industrial areas of France.

It is clear that, when the actual struggle for the Rhine has been fought out, the French, with Belgian and Dutch support, will again raise the demand for security arrangements on the Rhine calculated to protect Germany's western neighbours from a fresh German aggression.



Canada In World Trade

by ARTHUR L. NEAL

TRADE between peoples of different races and countries was being conducted at the dawn of recorded history, but the growth of large scale international commerce is a development of comparatively recent times. A century ago, the total of world trade was less in value than exports from Canada last year.

In the 70 odd years between Confederation and the outbreak of hostilities, Canada's trade rose from $120,000,000 to almost $2,000,000,000. During the same 70 years the United States' share of world trade increased by 50 per cent, Germany's by 10 per cent, the United Kingdom's relative position declined by 30 per cent, and France's by 40 per cent. Canada's share increased by fully 200 per cent. With one two-hundredths of the world's population, Canada, before the war, accounted for one thirtieth of its international trade.

No wonder that the future participation of Canada in the markets of the world is receiving painstaking study and thought, not only in Ottawa, but across the country throughout the business community generally! Even those citizens who give no conscious thought to international commerce and its future will be closely touched by its implications in their daily lives, for export trade is the most potent, vitalizing single influence on this Dominion's prosperity. The Minister of Trade and Commerce, the Honourable James A. MacKinnon, said recently, speaking in Hamilton, "Canada can never have too much foreign trade. Cut down that trade and you lengthen the lines of unemployment across Canada. Surely that lesson has been burned into our memory and our conscience by the tragic years of the depression."

Exports are important to Canada because they spell employment and prosperity. Only through wide participation in the markets of the entire world can the greater part of Canada's resources be most fruitfully utilized.

Imports are not less vital, for only by drawing upon world-wide sources of supply can Canada support a high standard of living within its boundaries. Moreover, as the war has clearly demonstrated, the volume of imports has a direct bearing on the capacity of our customers to pay for the Canadian things they want and are so willing to buy. Canadian currency is in short supply among several of our most important customers. Contrary to an often casually accepted notion, money spent on imports and for their payment to outsiders does not "leave the country". Dollar funds so paid out pass, at least temporarily, into foreign accounts but these are continually drawn upon in order to pay for Canadian goods and services. Dollars supplied to outsiders through Canadian imports find their way into the pocketbooks of those Canadian citizens who, directly or indirectly, obtain their livelihood by producing for export. This is merely the working out of the simple but sometimes forgotten truth that trade is a two-way affair, and, if a country wishes to sell, it must in its turn buy.

Top left: Canadian National Steamers Lady Somers *and* Connector *discharging Canadian goods at Grace Wharf, Kingston, Jamaica.*

Bottom left: Section of Cape Town harbour, South Africa, where many Canadian goods are unloaded.

Left: Frosted fillets being prepared for export, Halifax.

CANADA'S TOTAL DOMESTIC EXPORTS
ACCORDING TO ORIGIN AND DEGREE OF MANUFACTURE
Calendar Years 1939 and 1943

	Millions of Dollars 1939	1943
Farm Products (Vegetable and Animal)—		
Raw Materials	176	395
*Processed Goods	141	320
TOTAL	317	715
Wild Life Origin		
Raw Materials	14	25
Processed Goods	—	1
TOTAL	15	26
Marine Origin		
Raw Materials	13	28
Processed Goods	17	33
TOTAL	30	61
Forest Origin		
Raw Materials	20	25
Processed Goods	223	366
TOTAL	243	391
Mineral Origin		
Raw Materials	51	45
Processed Goods	236	1,093
TOTAL	287	1,138
Mixed Origin		
Raw Materials	—	—
Processed Goods	33	640
TOTAL	33	640
Recapitulation		
Raw Materials	274	519
Processed Goods	651	2,452
TOTAL DOMESTIC EXPORTS	925	2,971

*Includes articles processed from imported materials, e.g. rubber

WHAT CANADA SELLS

In 1944 export of Canadian products reached the amazing and unprecedented total of over three thousand million dollars. Although some thirty odd nations exceed Canada in population, none except the United States had a higher value of exports in that year. It has been repeated so often that it is now a commonplace that in peacetime years Canada was normally the world's fourth ranking export nation. The figure of exports has grown from a depression low of $490,000,000 in 1932 by successive increases each year, apart from a slight recession in 1938. No year is completely normal from a statistical point of view. Always some extraordinary features of price and supply influence totals, but the figures in the table below, which shows the exports from Canada according to the main divisions of extractive industry, are reasonably typical of the pre-war and wartime situation.

All phases of Canadian productive effort depend on export trade.

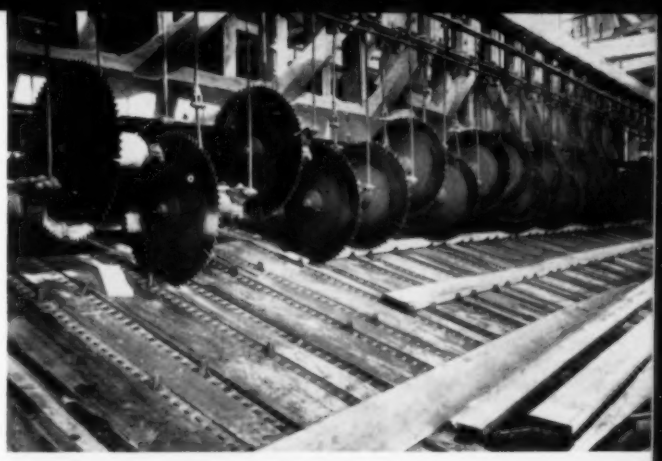
AGRICULTURE

Agriculture, the most important of the basic industries, is the largest source of income in Canada and, before the war, was the greatest contributor to export trade. As will be seen from the table above, the value of exports under this head have increased by 125 per cent, although surpassed by articles

Left: Loading tractors on to railroad car at Minneapolis, Minnesota. Photo by John Vachon

Below: Canadian seed and table potatoes are highly esteemed in foreign markets. Harvest time in New Brunswick

of mineral origin which have grown from $287,000,000 in 1939 to $1,138,000,000 in 1943. Of exports of agricultural origin, wheat was, by all odds, the greatest before the war. It is not too much to say that the economic justification for the settlement of the Prairie Provinces of Canada is found in the development of export markets for wheat. For many years in peacetime, wheat was Canada's foremost export commodity, although in recent years newsprint and gold occasionally topped the list. Since the war, wheat has declined in relative, though not in absolute, importance. Exports of wheat were valued in 1939 at $109,000,000 and at $234,000,000 in 1943. There are listed below a few of the principal exports of commodities of agricultural origin for the calendar years 1939 and 1943.



Right: top to bottom:

Automatic trim saws in Canadian plant at Dollarton, B.C.

British Columbia red cedar shingle bolts from which high quality shingles are made and exported.

C.G.M.P.B. photo

About 94 per cent of Canada's newsprint production is destined for export. Scene in a Canadian pulp mill

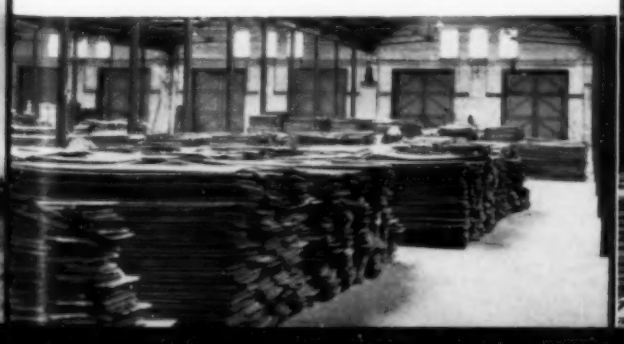
C.G.M.P.B. photo

Galvanized sheets and tinplates at Newport Docks, Cardiff, Wales, packed for shipment in boxes made of Canadian wood.

Courtesy Great Western Railway, Cardiff

Below: Canadian copper cathodes in storage on the docks at Swansea

Courtesy Great Western Railway, Cardiff



(1)

(3)

(4)

(1) Unloading Canadian cheese at Bristol, England.

(2) Loading apples of 1939 crop at an Eastern Canadian port for export to the United Kingdom.

(3) Field of Irish Cobbler seed potatoes, Prince Edward Island

(4) Upwards of twenty per cent of Canada's tobacco is exported. Flue-cured tobacco hanging in a kiln after curing, Norfolk.

(5) Flue-cured tobacco field and farm buildings, Simcoe.

PRINCIPAL EXPORTS OF COMMODITIES OF AGRICULTURAL ORIGIN

	1939	1943
Wheat	$109,051,000	$234,458,000
Bacon and Hams	32,656,000	116,122,000
Wheat Flour	16,378,000	66,274,000
Cattle	15,353,000	9,604,000
Cheese	12,249,000	26,811,000
Raw Tobacco	10,183,000	4,241,000
Canned Fruits and Vegetables	10,165,000	1,221,000
Whiskey	7,914,000	12,134,000
Barley	7,882,000	32,435,000
Leather, Unmanufactured	6,856,000	3,362,000
Apples, Fresh	5,853,000	1,838,000
Bran, Shorts, etc	4,845,000	1,865,000
Oats	4,142,000	42,294,000
Hides and Skins, Raw	3,529,000	565,000
Oatmeal and Rolled Oats	3,432,000	613,000
Milk, Processed	3,295,000	5,222,000
Butter	2,674,000	3,820,000
Potatoes	2,510,000	2,831,000
Rye	2,045,000	4,091,000
Malt	1,963,000	2,082,000
Pickles and Sauces	1,612,000	828,000
Clover Seed	1,310,000	928,000
Leather, Manufactured	1,248,000	2,789,000
Maple Sugar	1,216,000	1,160,000
Canned Meats	832,000	5,052,000
Sausage Casings	787,000	1,322,000
Hay	774,000	2,527,000
Horses	726,000	1,420,000
Poultry (Dead)	643,000	239,000
Pork, Fresh	552,000	3,512,000
Confectionery, incl. Candy	516,000	3,298,000
Eggs (including Dried)	311,000	15,064,000
Ale, Beer and Porter	172,000	5,102,000

Minerals

Before the war, products of mineral origin constituted the group next to agriculture in value of exports. At that time, the bulk of mineral exports was non-ferrous metals in various stages of manufacture. Canada produces nickel, copper, zinc and lead very greatly in excess of its own requirements, exporting more than 90 per cent of the total output. The value of exports in 1939 and 1943 is given below:

	1939 $	000's Omitted	1943 $
Nickel	44,594		68,346
Copper	36,502		30,816
Zinc	9,315		16,516
Lead	10,401		9,647
Silver Ore and Bullion	7,243		5,558
Platinum	6,853		7,739

The extraction of aluminum from clays presently available in Canada is not economic, but the abundance of cheap electric power makes the recovery of aluminum from bauxite imported from the United States and British Guiana a profitable undertaking. In 1939, exports of aluminum and products amounted to $5,950,000. The enormous expansion of this industry since the war is reflected in the huge growth in exports which, in 1943, amounted to $129,262,000.

Exports of mineral origin included also iron and steel products, although Canada has only recently become a producer of iron ore. While the effects of the war on Canada's trade are apparent throughout its whole composition, they are particularly striking in this group of commodities. Under this heading there are included, for statistical convenience, a large number of products of which iron and steel are the chief components. The principal item is vehicles, exports of which have risen in 1943 to a total of $507 millions, as compared with exports in 1939 of just over $26 millions. In connection with this growth it should be noted that, while Canada does not receive Lend-Lease Aid from the United States, many articles provided under Lend-Lease are brought into Canada for further processing and are subsequently shipped to one or other of the United Nations for use in the common war effort. Of course, many materials which are not under Lend-Lease are imported also for processing. These materials appear in the import and export statistics and in some measure are responsible for the enormous growth in trade. This

Sample of a pre-war advertising campaign in the United Kingdom by the Canadian Government

Left: Thirty million feet of timber in the Miramichi River, N.B.

Toilet soap from Canada being delivered to warehouse at an Indian port.

factor is applicable to many manufactured items exported from Canada but is particularly apparent in the case of vehicles and other iron and steel articles. The growth in exports has thus been in part supported through increased imports of parts and components. Total exports of iron and steel products were valued at slightly more than $63 millions in 1939 but by 1943 had risen to $716 millions. Besides vehicles (including trucks, gun carriers and tanks), other items in the iron and steel group include machinery, farm implements, rolling mill products and pigs, ingots, blooms and billets. Guns, rifles and firearms are included in this group, and exports in 1943 were valued at nearly $144 millions. The last is a distinctly wartime item, and it is striking that the value of exports in 1943 was greater than the sales abroad of Canada's leading export commodity, newsprint, in 1939. Prior to the war, Canada had no appreciable export trade in guns and rifles, exports being valued at a mere $16,000.

To complete the story of minerals in Canada's export trade, mention must be made of gold and the non-metallics. Of the latter, the principal items are asbestos, abrasives, coal and gypsum. Exports were valued at $29 millions in 1939 but due to wartime needs, mainly for abrasives, rose to $62 millions in 1943.

Schooner from which three million feet of Canadian timber was discharged, in 1940, at Sydney, Australia.

Gold is annually the most valuable item in Canada's mineral production. Since it is a money metal, gold does not move in international trade under the same circumstances as apply to other commodities. It is not generally considered as merchandise since world trade in gold is governed almost exclusively by financial rather than by ordinary commercial considerations. Moreover, it frequently happens that when Canadian gold is sold by the Bank of Canada to foreign buyers it still remains in the country. In such cases the gold is set aside, or "earmarked" in the vaults of the central bank and held at the disposal of the owners. For these reasons, exports of gold are not now included in the ordinary statistics of exports. Since the domestic consumption of gold in Canada is small, the total production approximately indicates the income derived by the industry through export trade. This amounted to $184 millions before the war, but manpower shortages and diversions to more essential needs have resulted in a decline to $111 millions in 1944.

Forestry

The forest area of Canada totals nearly one and one-quarter million square miles and ranks third of all countries in this respect, exceeded only by the U.S.S.R. and Brazil. The productive forest area in Canada is officially placed at 770 thousand square miles, an area equal to the combined areas of the British Isles, France, Sweden, Portugal, the Netherlands, Denmark and Finland.

In export trade, pulp and paper were Canada's principal commodities in peacetime, the largest single item being newsprint. About 94 per cent of Canada's newsprint production is destined for export and, in 1939, exports of this commodity were valued at $116 millions.

Through the five years of war, Canada, with help from two newsprint mills in Newfoundland, has been virtually the only source from which the United Nations could import paper. During these years, Canadian newsprint mills have been the mainstay of a free press in more than forty other countries. Notwithstanding manpower shortages and the diversion of hydro-electrical power to other uses, exports of newsprint have risen in 1943 to a value of $145 millions. Second among the exports provided by the Canadian forests is woodpulp, valued in 1939 at $31 millions. Tremendous quantities of pulp and paper products in many forms have been essential to the ability of the United Nations to wage war. Canadian pulps are essential for nitrating into high explosives, for manufactured plastics and synthetic fibres, for surgical dressings and hospital wadding. Canadian paperboard is used in place of metal and wood for shell casings, packaging gun barrels, ordnance parts and small arms ammunition. It is in demand as containers for blood plasma, for foodstuffs and medical supplies. It forms the component parts of sea and land mines, of radio equipment, of shells and other weapons of war. Building board from Canadian pulp has been used in place of lumber in temporary structures such as barracks, hospitals, and other buildings. These wartime demands, combined with normal requirements, have resulted in an enormous expansion in the production and export of woodpulp. In 1943, Canadian pulp exports reached a peak of one and one-half million tons, which was 285 per cent of the 1938 figure.

While pulpwood products rank first among Canada's exports of forest origin, the historic lumbering industry is also of high importance. In 1667, during the French regime,

Lumber is one of Canada's oldest and leading export products.

timber was first exported to Europe. This industry has assumed great proportions. Planks and boards of Douglas fir, spruce and pine, contribute the bulk of exports; shingles, pulpwood and Douglas fir logs are important items. Other manufactured wood exports include laths, railway ties, telegraph poles, shooks and spoolwood. The lumber industry of Canada represented a capital investment of about $320 millions according to pre-war figures. Net production was valued at over $160 millions and estimated employment exceeded twenty-five million man days. Upwards of 300,000 individuals on the basis of full or part-time employment earned wages valued at over $109 millions. Every province in the Dominion shares in the lumber export business. Maintenance of diversified export markets has had a fundamental stabilizing influence on employment as a whole throughout the country.

The reconstruction of devastated areas in Europe, combined with possible forest devastation and dislocation in the industry in the Scandinavian and other countries will present a post-war opportunity and a challenge for Canadian enterprise.

Other Exports

No summary of Canada's export commodities can rightly be concluded without mention of the fisheries and the fur trade of romantic history. The former represented an export trade of thirty million dollars before the war and sixty million dollars under the stress of the additional food requirements of the United Nations. The latter was valued at fifteen million dollars in 1939 and twenty-six million dollars in 1943.

What Canada Buys

Canada has extensive import requirements. Crude petroleum, coal, machinery and automobile parts are the most important commodities, but none approaches in value the vast sums represented by the leading commodities, exported from Canada. While Canada's exports comprise relatively few commodities in large quantities, imports cover a wide range. Canada grows no cotton, no rubber, and must obtain from abroad its supplies of tea, coffee, cane sugar, cocoa, tropical fruits, nuts and many other vegetable products. Coal, mentioned before as a leading import, is produced in Canada but not close to its principal manufacturing areas. Its petroleum resources, as at present developed, fall far short of domestic requirements. Tin and the raw material for the Canadian aluminum industry must be imported as well as iron, raw silk, certain fibres, chemicals, and a wide range of highly finished articles that Canadian industry does not even yet supply. Large imports for Canada are therefore essential, and Canada stands high among the nations in that regard.

Total imports into Canada in 1939 were valued at $751 million. Canadian industry claimed the biggest share. An approximate calculation indicates that of the total imports about 42 per cent represented producers' materials, 12 per cent represented producers' equipment, 24 per cent represented consumers' goods, 7 per cent transportation equipment, and 7 per cent fuel, electricity and lubricants. The remainder consisted of advertising matter, containers and other auxiliary materials for commerce and industry, munitions and war stores and a certain number of items it is not possible to classify.

The influence of the war is reflected in an almost fourfold increase in total imports. This growth is common to each of the groups listed above, with the exception of fuel, electricity and lubricants and auxiliary

Grading citrus fruits in the packing plant, Fort Pierce, Florida. Photo by Arthur Rothstein

Tea being plucked here may have been used in Canada.

materials for commerce and industry.

The impact of wartime conditions is clearly evident in the changes in the relative shares, consumers' goods dropping from the 25 per cent mentioned above to 13 per cent of the total, while transport, largely owing to imports of war vehicles and parts, jumped to 22 per cent of the total. Munitions and war-stores, which were an insignificant item in 1939, accounted for 17 per cent of the total in 1943.

It is sometimes suggested that the impetus given to industrialization in Canada during the war will reduce the Dominion's dependence on outside sources of supply for many commodities. Expansion of a productive capacity in Canada will undoubtedly enable Canadian industry to satisfy many post-war domestic demands which were formerly supplied by imported goods. The rapid development of the machine-tool industry during the war is a good example. Nevertheless, there will remain many things it will be found more economic to import than to produce at home. In fact, the growth of industrialization is likely to increase rather than decrease total dependence upon imports. If industrialization in Canada results in higher incomes within the Dominion—and it is hard to see why it would be pursued if it does not—increased demands for all sorts of commodities will follow. In addition, Canadian

Unloading South African oranges at Montreal.

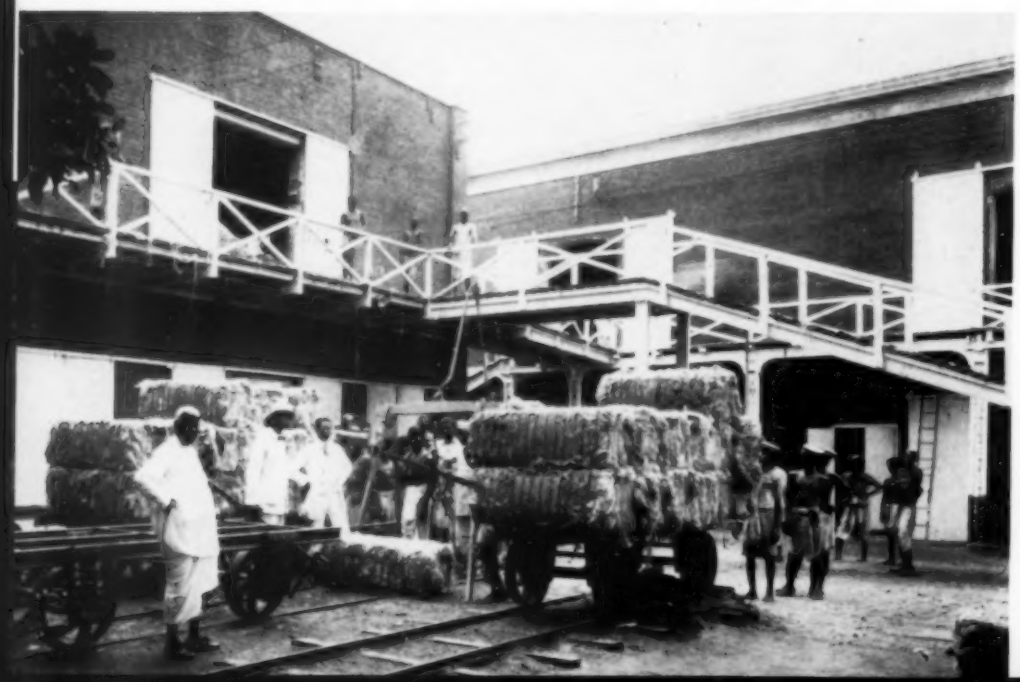
industry is itself a large importer of materials. In the past, when industry has advanced in Canada, imports have increased *pari passu*. The accompanying chart makes that abundantly clear and suggests the pattern of the future.

Markets and Sources

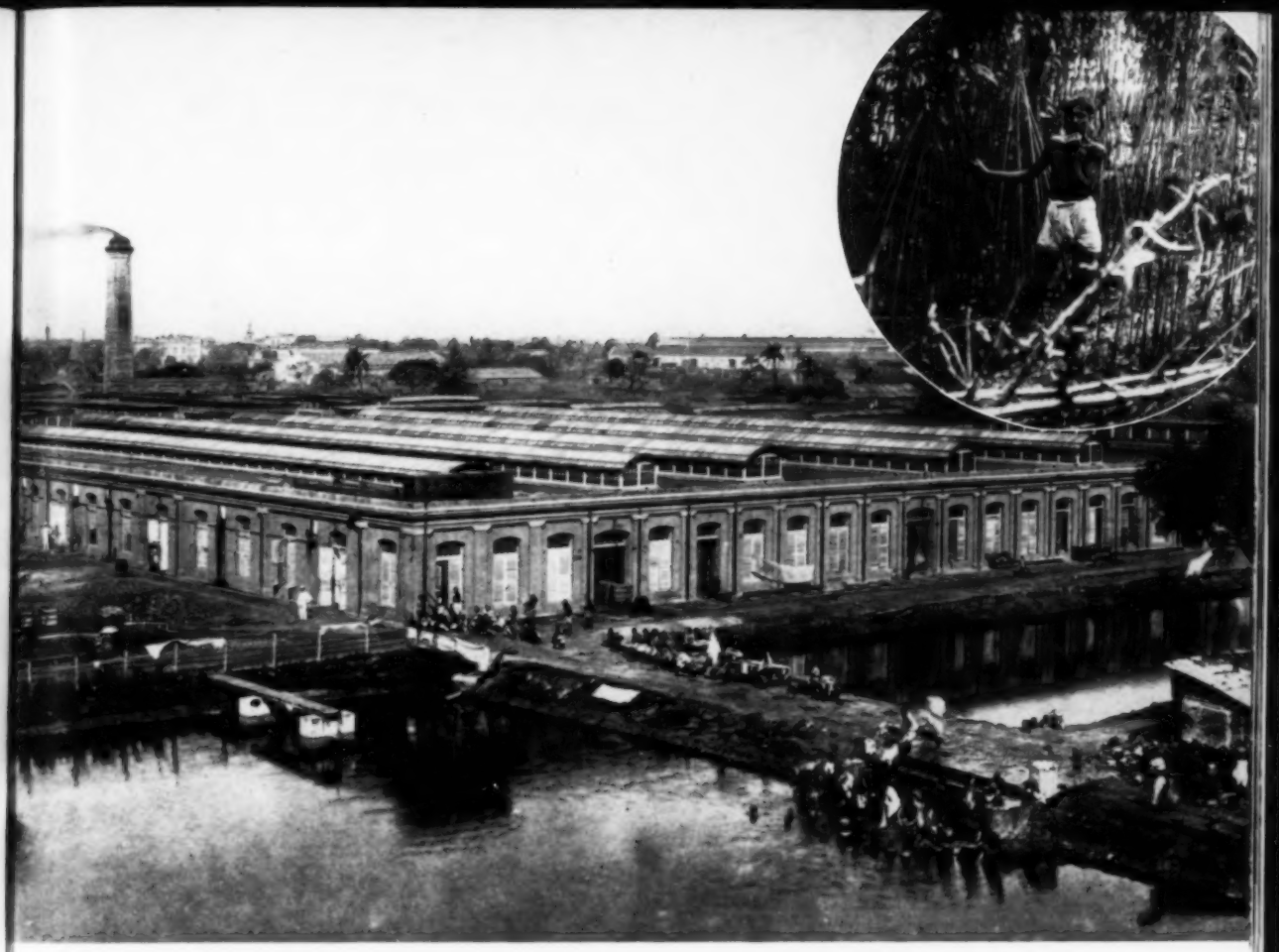
Canada's trade has always been conducted predominantly with the two great English-speaking nations—the United Kingdom and the United States. In the early years of the Dominion, the United Kingdom, which was then making extensive capital investments in Canada, supplied more than one-half of Canada's imports. The United States, always a close second in Canada's import trade, supplanted the United Kingdom in first place in 1876 and has maintained that position since, with the exception of the years 1880–1882 inclusive.

The United Kingdom was Canada's principal customer from 1890 to 1920. Since that time the United States has occasionally taken first place. In 1939, the United States supplied 66.2 per cent of Canada's imports and the United Kingdom 15.2 per cent. As to exports, the United Kingdom accounted for 35.5 per cent and the United States 41.1 per cent, although in the immediately previous years the percentages in the case of exports had been about reversed. Trade with other British and foreign countries, although overshadowed by the United Kingdom and the United States, has nevertheless shown a greater relative expansion in the present century. Imports from "other countries" represented, in 1939, 18.6 per cent of the total as compared with 15 per cent in 1900, and exports represented 23.4 per cent as compared with 8.8 per cent. Before the outbreak of hostilities, Canada was sending her wares to all parts of the world and obtaining supplies from every country and climate.

As in the case of the commodity composition of export trade, the war has exerted characteristic influences in the direction of trade. Particular difficulties surround the interpretation of the volume and destination of exports. For example, the current high level of exports to the United States represents substantially more than normal commercial trade. Total exports to the United States of domestic and foreign produce amounted to $1,166.6 million in 1943. Of this it has been estimated about $780 million was accounted for by exports of a general commercial character. Even of this amount, a substantial part was used for war production. Wheat consumed in the production of alcohol for use in synthetic rubber plants is but one example. Another part of the total in 1943 was due to the abnormal



Jute fibre ready for export to Canada



Jute mill on the Hooghly near Calcutta. (Inset) Jute plants ready for cutting. This fibre (grown mainly in Bengal) is one of India's most important agricultural products.

Johnston & Hoffmann Ltd. photos

demand for Canadian feed grains arising from shortages in the United States. To some extent the increased exports to the United States were a reflection of civilian demands created from the high levels of incomes in the United States.

Exports to the United Kingdom, in large part, reflect an expansion in agricultural production mainly to provide the United Kingdom with food, some of which was formerly obtained from other countries. In large part, also, they comprise war materials supplied under special financial arrangements.

Similarly much of the wartime exports to other destinations is accounted for by non-commercial transactions. As British forces have been engaged on many fronts, there have been exports on British account to all parts of the world. Consequently, the figures of exports to some foreign countries as well as to many Empire countries, have included substantial amounts of munitions and war supplies on British account. Of the total exports of $421.5 million to foreign countries, other than the United States, in 1943, well over $300 million was made up of exports to Mediterranean countries such as Egypt, Italy and British Africa where British, Canadian and other Allied nations' forces have been engaged. Exports to Russia have been predominantly Mutual Aid and, in some cases, represented British diversions to this ally. Exports to Greece likewise cannot be considered as commercial trade since they consist largely of a free gift of wheat by the Canadian Government. Red Cross parcels for prisoners of war and other gifts also appear in the exports to foreign countries. It has been estimated that of the trade to foreign countries other than the United States, less than $35 million

represents normal commercial transactions and this is largely comprised of exports to South and Central American countries.

Financial Considerations

International trade needs smooth-working and efficient financial machinery. This Dominion's wartime trade in particular has been made possible only by financial arrangements of a distinctly wartime character. Moreover, the changes that have taken place in the debtor-creditor relations of the nations will have far-reaching effects on post-war trade. Before the war, particularly in the trade between the British Commonwealth of Nations and the United States, free exchange markets were the characteristic channels of international settlements. Since each currency was freely convertible into other currencies, it was possible for the nations to use the proceeds of sales in one country to pay for purchases in another. In the decade before the outbreak of war, Germany and some other countries attempted to control trade through a series of political bargains. The principal feature of such bargains was an attempt to make imports and exports balance as between pairs of countries. This bilateral system was very damaging to world trade. It directed trade away from natural economic channels and restricted exchanges between pairs of countries by eliminating excesses of imports. Thus it operated to reduce the total of world trade generally by its effect on the markets of countries other than the pair involved in any particular bargain.

Canada's international accounts provide an excellent example of how the system of multilateral settlements operated. For a period of years before the war, Canada consistently had credit balances on current account with both the United Kingdom and other Empire countries. In the three pre-war years, the current account balance with Empire countries averaged about $169 millions a year. It was possible to convert this income freely into United States dollars or other currencies which were required by Canada in meeting various current liabilities abroad.

It is clear that Canada has a special interest in a freely functioning world economy based on multilateral trade. The outbreak of hostilities created two difficulties. In the first place, it at once became apparent that the United Kingdom, despite its huge investment throughout the world, would be hard put to secure sufficient foreign exchange with which to purchase war materials abroad. At the very outset of the war, exchange control was introduced in the United Kingdom, and sterling became inconvertible. A series of special financial measures had to be taken and developed

Canada is an important market for Australian vine fruits; vineyard, drying process, and (inset) interior of an Australian winery.
Victorian Government Railways photo

Weighing up baskets of tea leaves on a plantation.

during the war to make it possible to export such a large volume of exports from Canada to the United Kingdom and other overseas countries. These measures included the repatriation of Canadian securities held in the United Kingdom, totalling about $700 millions and the accumulation of sterling balances by the Bank of Canada which were subsequently converted into an interest-free loan. Other outstanding measures included Canada's billion-dollar gift and the Mutual Aid Board programme of the latter years of the war. The appropriations for the last two forms of aid to all countries totalled $2,800,000,000. Other Canadian dollars have been made available to the United Kingdom through expenditures which Canada has made overseas in connection with armed forces abroad. In the fiscal year 1933-34 such expenditures by the Canadian Government amounted to $534 millions. In 1943, the United Kingdom obtained further Canadian dollars through repatriation by Canada of the British equity in the fixed capital of war plants in Canada, amounting to $205 millions. There were also large receipts from the return of working capital funds formerly advanced. It is only because of such special receipts of Canadian dollars that the United Kingdom has been able to continue to make large purchases in Canada, since the more normal payments by Canada (such as those for imports from the United Kingdom and the sterling area, or payments of interest and dividends to British investors) are small in relation to the heavy British purchases during the war and for which Britain must have Canadian funds.

With the United States, the financial problem has been just the opposite. Lacking the normal credit balances in sterling with which to settle the deficits incurred with the

Tracks for Army half-trac cars. Travelling chain hoists carry tracks from the curing press to trimming racks on which curing plates and overflow edges of rubber are removed, Ohio.
Photo by Al Palmer

United States dollar area, it became necessary to conserve United States dollars for the more essential purposes of the war and to develop new sources of United States dollars. Exchange control was introduced in Canada shortly after the outbreak of hostilities. The principal means of conserving United States dollars was the control of capital movements. Expenditures on Canadian pleasure travel and non-essential commodities in foreign countries were limited. As a result of the agreements entered into at Hyde Park in April, 1941, new sources of United States dollars were created through the sale of munitions on a large scale to the United States Government. Another factor has been the growing volume of imports of capital mainly from the purchase of outstanding Canadian bonds by American investors and expenditures by the United States Government on the Alaska Highway, Canol and other activities in Northern Canada.

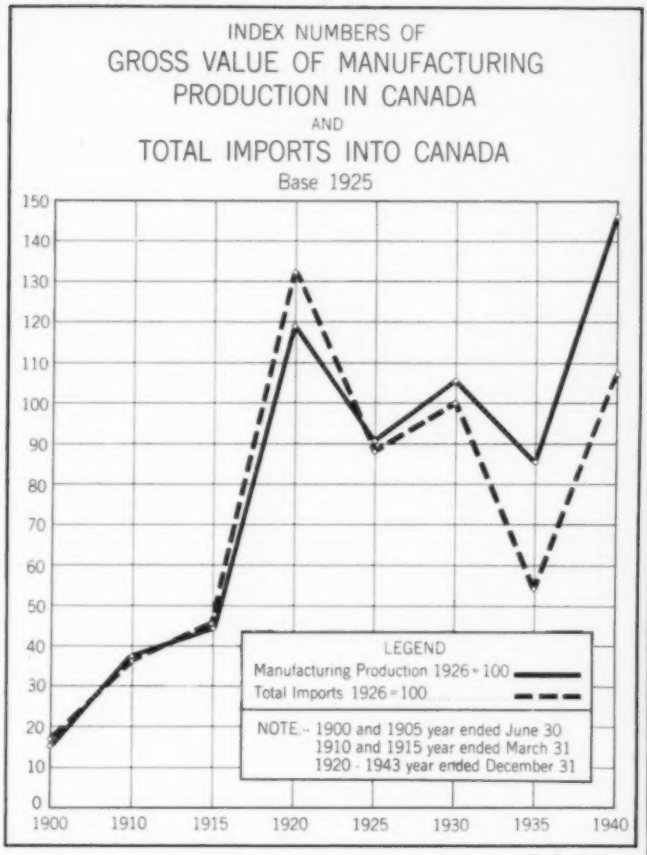
The Hon. Jas. A. MacKinnon drew attention to the post-war implications of this situation recently. He said: "When the war is over, can we expect to fall back again on the cornerstone that supported the main structure of our trade prior to the war—that is, the triangle of Canadian-British-American commerce that worked out so greatly to our advantage over so many years?"

One of the greatest post-war difficulties lies in the balance of payments problem of the United Kingdom and the change in its creditor status. Before the war, approximately one-third of the imports into the United Kingdom were paid for through investment income and shipping earnings. It has been estimated that investment income may well be reduced after the war to half the two hundred million pounds obtained in the pre-war years. Shipping

Left: Fleet of coal cars made of Canadian lumber in Cardiff, Wales. Large quantities of Canadian Douglas fir are used for this purpose.
Courtesy *Western Mail*, Cardiff

Below: Making boxes for dried fruits, using Canadian lumber, Australia.

earnings will unquestionably be much reduced, at least until the merchant marine can be rebuilt and recapture its former position. Income from commissions, financial services, etc., may be impaired, and United Kingdom exports have also been a major casualty of war. The implications for Canada are indeed serious; first, because of the obvious disadvantage of having one's best customer in straightened circumstances, and, second, because if exchange control is necessary, it may restrict or eliminate the system of multilateral settlements through the operation of which Canada was previously able to use its credit balance of sterling to settle the deficit arising out of the commercial and financial relations with the United States. For these reasons, Canada has an especial interest in the proposals agreed upon by the experts at Bretton Woods for an international monetary fund and a bank for reconstruction and development. The Export Credits Insurance Act, passed by the Canadian Parliament last year, has been designed to furnish some of the credit facilities which will unquestionably be needed to meet the special problems of the early post-war years. During the transitional years, special credit facilities will have to be provided to finance exports to some countries devastated by the war or suffering from serious economic dislocation. Further relief, of course, will be afforded by Canadian expenditures in the same countries for merchandise and services. The larger Canadian purchases of merchandise are, the smaller will be the shortage of Canadian dollars, and the amount of other financing necessary will be correspondingly reduced. It may also be necessary to encourage exports to other countries which can provide free exchange which Canada will need to meet its obligations elsewhere. The importance to Canada of the satisfactory solution of these difficult and vexing financial problems cannot be exaggerated.



C. G. J. chart

Canada is a heavy importer of oil. Derricks in an oil field

Photo by Russell Lee

Finnsen of the R.N.A.F.

by A. STANLEY DEAVILLE

"BUT THE HONOUR was not paid to me personally, you understand. It is a tribute to the men of the Royal Norwegian Air Force, of which I am just an ordinary member." The tall, clear-eyed young officer spoke earnestly, even gravely, so anxious was he that I should understand how he happened to be one of the very few living men who have seen their own portraits on postage stamps.

We were sitting in my library, after lunch, and I was talking with the personable airman who is the subject of my story. It was difficult, if not impossible, to get him to talk about his exploits as a soldier and a flying man. Like many other young fellows of Norwegian blood, he had been called out of quiet civil life to battle first for the defence and then for the liberation of his country, and right nobly had he answered the call. One realized that behind the quiet, cultured voice, speaking perfect English with only the merest trace of accent, lay iron resolution and daring, and that the level eyes had seen things that were forever burned into his brain: the rape and plunder of his homeland, the base treason of a handful of quislings, and the slow, sure beginnings of retribution. Such men are not quick to anger, but can be counted on to see things through to the end. Let us see how his picture comes to be printed on a stamp.

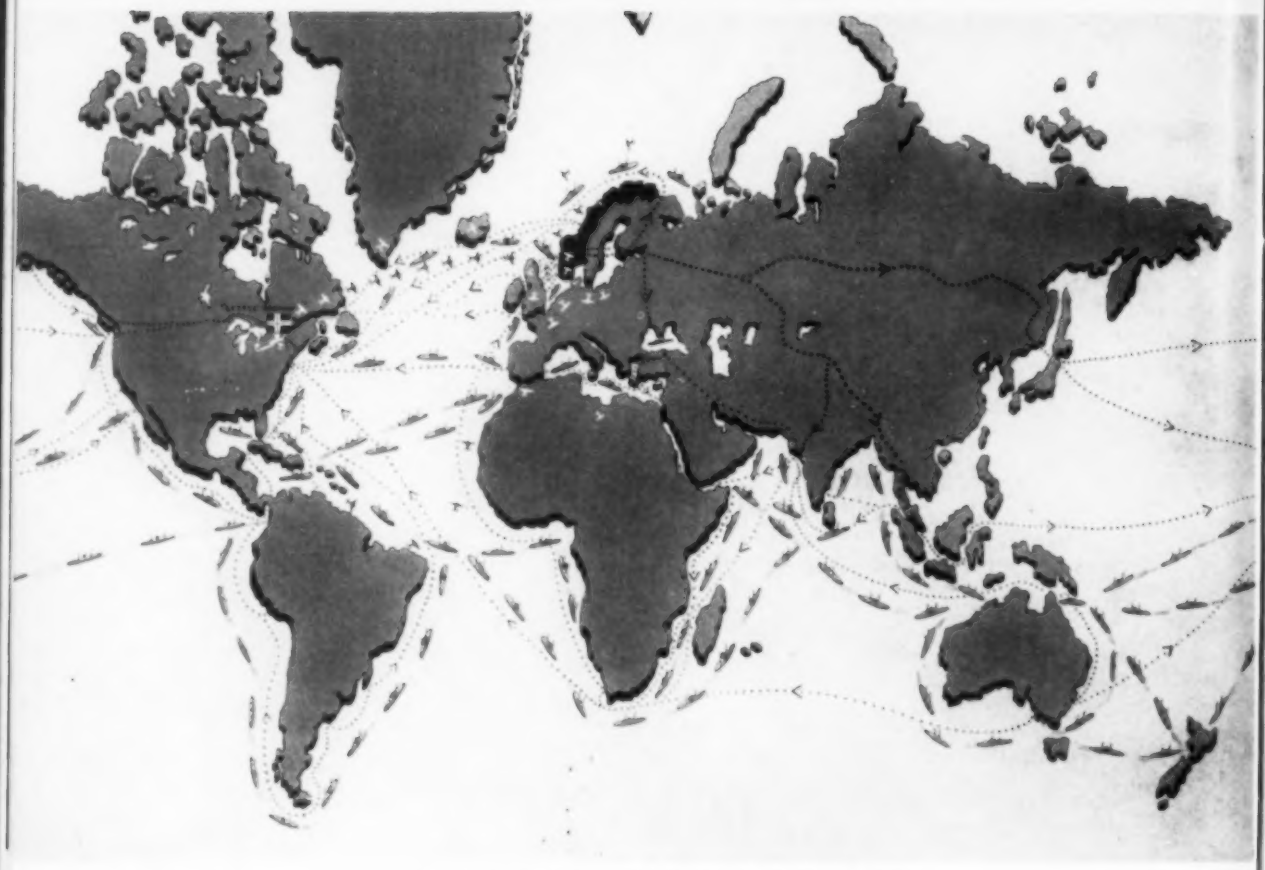
When the philatelic history of World War II is written, among the most colourful incidents will be the story that lies behind the stamps issued early in 1943 by the Norwegian Government in London, under the personal authority of His Majesty King Haakon VII, "for offices abroad". In characteristically simple and direct Norse fashion, these stamps of Norway-in-exile record an epic of resistance to cruel, overwhelming force which cannot yet be told in all its details.

Among the six unpretentious designs selected by the Norwegian authorities two stand out: first, a convoy of merchant ships, and second, a young pilot and his plane. One immortalizes the seamanship and hardihood of Norway's sailors, and the other the indomitable spirit of her youth in the struggle against Nazi tyranny and brutality.

The saga of Norway's merchant ships in this war is worthy of her Viking people: the story of how her modern ocean-going fleet, always a major factor in world transportation, became a vital element in the battle for sea-power and passed almost intact over to the Allied side at a crucial moment in the war. The stamps were issued for use on correspondence posted on board Norwegian ships at sea, and so, naturally, one of them bears the picture of a Norwegian convoy sailing under the Midnight Sun.

But the most interesting stamp of the series, in the opinion of many, is the 15 øre, dark green, showing a young Norse pilot and his plane. For behind this picture lies a story which lights up the future of Norway and of the world: the tale of the Royal Norwegian Air Force, the growth of "Little Norway" on

Right: Photograph of Lieut. Johannes Finnsen (from which the stamp was made) taken by Miss Kari Berggrav at Little Norway, Toronto, in July, 1942.



Routes of Norwegian volunteers to Little Norway

Canadian soil, and the rebirth of Norwegian resistance in the air.

The pre-invasion Norwegian Air Force was little more than a token establishment, yet, after the violation of their country, a few brave and angry pilots fought on tenaciously until no more Norwegian bases remained. When King Haakon and the Government decided to carry on the struggle outside the country, a final meeting of Norwegian airmen was called; oaths were sworn to stick together and never give in. Norway had kept her soul.

England could not help; France was prostrate; but Canada offered training space and ready access to *materiel*. Near Toronto a modern, fully-equipped air-training base called "Little Norway" sprang into existence. By devious routes from occupied Norway came hundreds of young men of Norwegian blood, rallying to the call of the Norseland in far-away Canada—"All for Norway". The first Little Norway at Toronto outgrew its bounds, and now there is a new Little Norway in the Muskoka region of Ontario. From these bases a steady stream of young Norsemen has flowed overseas to take up the air fight and help to bring closer the day of requital.

In the summer of 1941 a Norwegian photographer, Miss Kari Berggrav, visited Little Norway and made a number of fine pictures. One of the photographs showed a pilot standing in front of his plane, looking keenly skyward and shading his eyes with his right hand. For security reasons the real name of this pilot cannot be given; so let us call him Johannes Finnsen. This picture was so splendidly symbolic of the spirit of Little Norway and its flying men that when the authorities in London were looking about for a subject to be used on the stamp representing their Air Force they naturally and wisely chose it.

It was a very great pleasure to meet Lieutenant Johannes Finnsen, and later to

Little Norway on Toronto Harbour, with Island Airport to the left across the channel

learn (but not from him) some details of his story. He modestly disclaimed all personal credit for having his acknowledged portrait on a stamp, although the honour is well-nigh unique. With very few exceptions, only royal personages and a few presidents (ah, yes! and certain dictators) have the privilege of seeing their own likenesses on stamps during their lifetimes. Rare indeed are the private persons who live to see their portraits in this medium, and Johannes Finnsen is one of them. For this reason, if for no other, the reader may be interested to know what can now be told about him, until such time as the full details and his identity can be divulged.

Called up at the outbreak of war, Finnsen was a sergeant on neutrality guard when the invasion of Norway broke on the fateful night of April 9, 1940. He was in command of a machine-gun unit and had the satisfaction of disposing of a number of Nazis, manning the gun alone when his comrades were put out of action. Weary, famished, but still fighting on, he was finally surrounded by Germans yelling "hände hoch!", but craftily eluded them in the dusk and escaped to the north. Here he joined another group and resumed the grim unequal struggle.

When all hope of continuing the fight in Norway was gone, Finnsen and his men persuaded the skipper of a fishing-smack to take them to the Faeroes. Heavy weather and a defective compass endangered their boat, but a British destroyer, timely met, provided a reliable compass and a course for the Shetland Islands. They reached Baltasound, in the Shetland group, on the 9th of May, just a month after the invasion of Norway. From nearby Lerwick they took ship for Aberdeen and arrived in London a few days later.

After two eventful months in London, the Norwegian Government reached its decision to establish an air-training school in Canada, and Finnsen, in view of his former experience as an office manager in civil life, was de-

Above and bottom right: Vesle Skaugum, the recruit and recreational camp in the north woods of Muskoka. The old buildings to the right (above photo), once a Hudson's Bay trading post, have been standing well over a hundred years.

tailed to assist in organization work and office-management at the new station. He arrived in Canada early in August, and, after several strenuous months of this type of work, succeeded in getting permission to start training as a pilot. Little Norway was officially opened on November 10th, and Finnsen, a born airman, received his wings in the following June.

By August he was back in Britain, where the advent of Norwegian flying men was hailed as a good omen, and the Royal Air Force took the Norsemen to its heart. He quickly learned to fly the most advanced types of aircraft in weather that would have washed out his earlier training flights, and was posted to a northern station in September.

Operational flights, various narrow escapes, and innumerable fights with Jerry "bandits" followed, in which Finnsen was always the survivor. In April he shot up an armed enemy trawler and left it in a sinking condition. By May he was flying over France

Commando training at Vesle Skaugum

and Holland, and he was in the thick of the Dieppe Raid in August, 1942. Here he had bad luck, for his oil-cooler was shot through at the beginning, and he had a narrow escape when he was forced to climb as high as possible, turn his ship over, and bail out. His parachute fell on top of him when he was in the water, but he was fortunate enough to disentangle himself. A launch picked him up, and not until he was safely on board did he realize that he was wounded in the right leg. First aid and a tot of rum enabled him to sit propped up on the bridge, where he had a full view of the thrilling spectacle of Dieppe, and was of real assistance, despite his physical disablement, in identifying friend and foe during heavy air-rescue and general operations.

After several weeks in hospital, Finnsen was permitted to resume flying, but the knowledge and experience gained during his service in Europe were deemed too valuable to be risked in further combat service.

"Wings for Norway" unit in Iceland (since transferred)

Months of demonstration work in Britain followed, and then he was posted back, willy-nilly, to Little Norway, this time as flying instructor.

Above: The mascot of Little Norway, Muskoka—'Fanny', the coca-cola bear

Top left: Barracks

Left: Lieut. Finnsen, as a student pilot, with two companions

Above: The ground crew at Little Norway, Muskoka

Right: Norwegian comrades of Lieut. Finnsen, one of whom (top) has twelve planes to his credit plus a number of 'probables'.

Bottom right: Also in squadron with Lieut. Finnsen

I am very sure that, when the soil of Norway is finally purged of the foul Nazi intruder, Johannes Finnsen and many young Norsemen like him will be there, and quit themselves like men. However the battle may go at first, they will be in at the death. And sweet will be the savour of recompense.

All honour to you, Johannes Finnsen; we salute you! When all seemed lost and your country lay prostrate at the feet of brutal ravishers, you stood firm, and with your comrades kept faith and braved the unknown to carry on the fight. Soon Norway will be free again—and the new day will yet be fairer than the old. And when stamp lovers all over the world study the "Norway" pages of their albums, they will remember your story and that of your fellow airmen, and count it but just that your effigy shall remain as a permanent philatelic memorial to steadfast Norse faith and courage, and to Norsemen's unfaltering belief in the ultimate dignity of free men.

Air view of new Little Norway, Muskoka

Some Highlights in the Development of the Royal Norwegian Air Force

NORWAY WAS invaded April 9, 1940. The ensuing battle ended two months later with a loss to the Germans of 60,000 men and one-third of her fleet. By August the Canadian site for the reorganized Royal Norwegian Air Force had been chosen, and, while model Little Norway was being built on the waterfront of Toronto Harbour, training was going on at the Island Airport across the channel and at the Toronto Flying Club, where the pilots who had fought in Norway with antiquated planes were brushing up on the latest models. The Germans said that the R.N.A.F. had been wiped out and was not a force to be reckoned with, but they must have been thinking in terms of planes and not men when they made that statement, for on November 10, 1940, the camp was officially opened.

* * *

NEW ARRIVALS continued to pour into Little Norway, having either escaped by way of the North Sea, or half-way around the world via Russia and India or China. A recruit and recreational camp was soon needed, and finally chosen between two lakes near Huntsville, 160 miles north of Toronto. It was called Vesle Skaugum (meaning "little clearing in the woods") after the residence of the Crown Prince and Princess in Norway. The new buildings, designed by an officer of the R.N.A.F., are Norwegian in every detail, both inside and out, from the shining peeled logs to the lighting fixtures. Here recruit school and commando training is held in both summer and winter; long treks on skis and lazy days spent swimming and paddling make this an ideal spot in which to recuperate from a tour of operations overseas, or for an under-nourished recruit, recently arrived from Norway, to regain his mental and physical balance.

* * *

THE FIRST squadron left for Iceland in April, 1941, and was followed in June by the first all-Norwegian fighter squadron complete with air and

Air field at Little Norway, Muskoka

ground crew. These squadrons were made up of boys who had fought with the Air Force in Norway with antiquated planes, and who were now going back in modern avenger units. The second fighter squadron of men trained at Little Norway left shortly afterwards, and it was with this group that Lieut. Finnsen went into action.

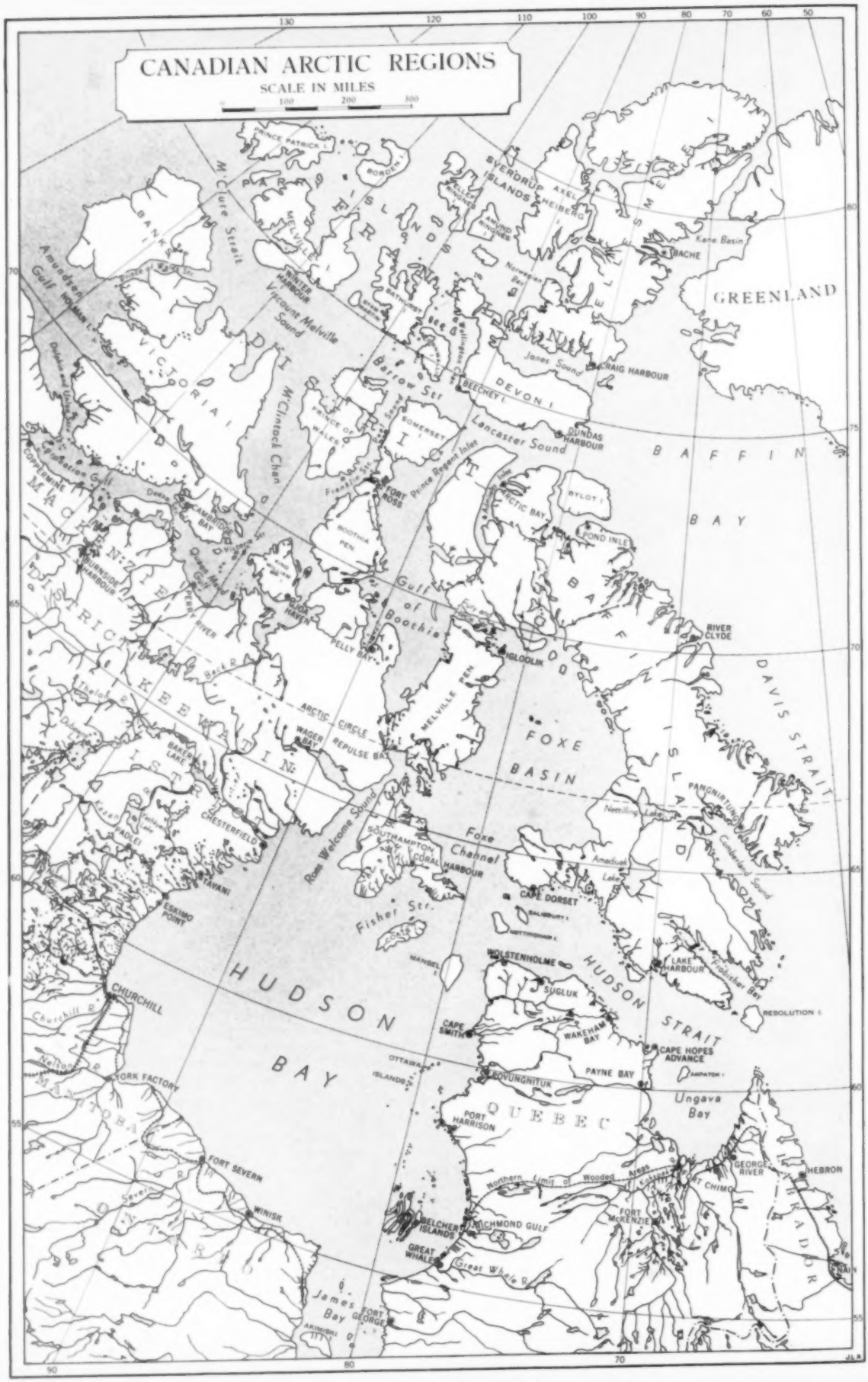
* * *

THE AIR FORCE soon outgrew the camp in Toronto, which was sold to the R.C.A.F., and in May, 1942, Crown Prince Olaf opened the new Little Norway at Muskoka, which is now a registered post office. The buildings, most of which are similar to those at Vesle Skaugum, were designed by the same officer-architect, and constructed by Finnish workers from logs hewn on the property. A remodelled air-conditioned barn was turned into barracks with hospital, Finnish bath and a giant hangar, making a completely modern camp (in a forest setting of pine and birch trees) with red-trimmed log buildings, green lawns, white-stoned driveways and sparkling pool (a water reservoir in case of fire). The R.C.A.F. and Norwegian flags fly over the camp—a symbol of the co-operation between the two forces—and the roar of planes may be heard day and night as they are guided over the myriad lakes in the district. It is here that Lieut. Finnsen is now instructing student pilots.

LIEUT. FINNSEN, as a student pilot at the Island Airport, trained on Fairchild planes, and then went to an R.A.F. Training Centre, under the British Commonwealth Air Training Plan, where he took his intermediate flying with Norwegian instructors, the Norwegian Government paying his expenses. Later he returned to Little Norway for advanced training on Curtis and Douglas planes, but this has now been discontinued, and operational training is taken with the Royal Air Force and Royal Canadian Air Force.

* * *

TO-DAY, the R.N.A.F. consists of patrol bomber units based in Britain, a Catalina unit located in England, fighter squadrons in France and Belgium, and individual members serving with the R.A.F. Fighter, Night Fighter and Bomber units, and in the Ferry Command (in which they pilot planes to all parts of the world). The bombers have dropped more bombs on Germany and enemy objectives than the Germans dropped on Norway during the whole of the 62 days of active resistance; a sign on the airport at Little Norway says: "Berlin is just 3,676 miles away". Many of the boys have made the trip a number of times. The Norwegians are proud to know that all their accounts, including cost of training, equipment, planes and ammunition, are paid for by the Norwegian Government-in-exile in London with income from the Norwegian Merchant Marine.


CANADIAN ARCTIC REGIONS
SCALE IN MILES
0 100 200 300
PRINCE PATRICK I.
BORDEN
M'Clure Strait
PARRY ISLANDS
MELVILLE I.
BANKS I.
Amundsen Gulf
POLLAUN I.
Victoria Strait
Victoria Island
Wollaston Land
Prince Albert Sd.
WINTER HARBOUR
Viscount Melville Sound
BATHURST
Barrow Str.
Prince of Wales Str.
SOMERSET I.
BOOTHIA PEN.
FORT ROSS
Lancaster Sound
BEECHEY I.
DEVON I.
DUNDAS HARBOUR
CRAIG HARBOUR
Janet Sound
Norwegian Bay
Kane Basin
BACHE
SVERDRUP ISLANDS
AXEL HEIBERG I.
GREENLAND
BAFFIN BAY
Coronation Gulf
Dolphin and Union Str.
CAMBRIDGE BAY
Queen Maud Gulf
BURNSIDE HARBOUR
MACKENZIE DISTRICT
KEEWATIN
Thelon R.
Back R.
GJOA HAVEN
Gulf of Boothia
PELLY BAY
IGLOOLIK
ARCTIC CIRCLE
WAGER BAY
REPULSE BAY
MELVILLE PEN.
FOXE BASIN
DAVIS STRAIT
RIVER CLYDE
PANGNIRTUNG
Nettilling Lake
Cumberland Sound
BAKER LAKE
CHESTERFIELD
EAGLE
TAVANI
ESKIMO POINT
Ross Welcome Sound
SOUTHAMPTON I.
CORAL HARBOUR
Foxe Channel
Amadjuak Lake
CAPE DORSET
Fisher Str.
WOLSTENHOLME
SUGLUK
LAKE HARBOUR
Frobisher Bay
RESOLUTION I.
HUDSON BAY
HUDSON STRAIT
CHURCHILL
Churchill R.
Nelson R.
CAPE SMITH
WAKEHAM BAY
CAPE HOOPES ADVANCE
OTTAWA ISLANDS
PAYNE BAY
YORK FACTORY
MANITOBA
QUEBEC
Ungava Bay
PORT HARRISON
Northern Limit of Wooded Areas
GEORGE RIVER
HEBRON
FORT SEVERN
Severn R.
MINISK
FORT CHIMO
FORT MACKENZIE
RICHMOND GULF
BELCHER ISLANDS
GREAT WHALE
Great Whale R.
James Bay
FORT GEORGE
LABRADOR

A Brief History Of Exploration And Research In The Canadian Eastern Arctic

by P. D. BAIRD and J. L. ROBINSON

THE far northeastern territory of Canada has been one of the most inaccessible regions of the world. The story of the gradual unfolding of its secrets is a fascinating one, over three centuries long, in which the principal characters—mariners, scientists and others—have all been fired by the same indefinable urge for discovery. Lured on by the search for the unknown and the thrill of first discovery, and despite hardships and death, expeditions and individuals have gradually extended our knowledge of the Canadian Eastern Arctic.

The methods, aims and size of the expeditions have undergone gradual changes. The earliest discoveries belong to the age of sail, and, in craft of ten to a hundred tons, the adventurers of this period dared the Atlantic and the northern pack-ice for brief summer seasons. Later, the dread of wintering within the Arctic was overcome, ships became larger, and steam-power provided assistance in the ice. Gradually the explorers learned to use the methods of the Eskimo in sledge travel, hunting, and winter dwellings. Parties became smaller and more precise in aim as the frontiers of knowledge were expanded.

Much remains to be done in the Eastern Arctic. Our knowledge of many phenomena is still incomplete and needs correlating with facts known about other Arctic areas and regions south of them. Air transport and modern technological aids have brought the Arctic closer to the outside world, making travel and wintering easier, but each expedition must lean on the experience of the past and acknowledge the work of the early explorers who achieved so much under such great material handicaps.

First Period—To 1818

Although it is fairly certain that Leif Erikson, travelling from Greenland to America in 1000 A.D., touched the southeast shores of Baffin Island, and thus has the honour of being the first discoverer, a gap of centuries follows before further explorers enter the region. The Columbian concept of a western route to the wealth of the Far East was the lure which sent explorers to the coasts of America. England, Spain, Portugal, and France outfitted expeditions which reached the newly discovered continent in the neighbourhood of Newfoundland and farther south, and it was not until 1576 that the first British party extended the search to the northwest.

In three small vessels, Martin Frobisher and his crew crossed the North Atlantic in 1576 to discover the bay in southern Baffin Island which now bears his name. Unfortunately, a false rumour of gold arose on his return, and trips in the next two years seeking this mineral accomplished nothing new in the way of discovery—nor in riches. Frobisher encountered the Eskimo, but his relations with these people were not friendly. John Davis, who was sent out by the merchants of London seven years later, was more fortunate, and reported the natives of Cumberland Sound "tractable and void of craft or double dealing". In two later voyages Davis penetrated as far as latitude 72° in Baffin Bay, examined the coasts, and noted openings as far south as Labrador.

The earlier explorers were deceived by the season for navigation in the Arctic. They usually arrived in early June, had a great deal of trouble with ice, and the crews were anxious to be home by the end of July. It was many years before they learned that the ice did not clear from the Arctic Islands until July, leaving August and September as generally ice-free months for travel. Henry

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Left: Canadian Arctic regions (general place-name map)

Chart of Hudson's Straits and Bay according to the discoveries made between the years 1610 and 1743.

Hudson was one of the explorers who did not learn this fact during his early voyages in northern regions. The story of Hudson's last voyage in 1610 is well known. His own account ends with his entry into the great bay named after him. The story of wintering in James Bay, and the account of mutiny the next spring comes from Abacuk Prickett, one of his crew, who tells how Hudson, his young son, and the least able-bodied or most loyal members of his crew were set adrift in a small boat in June, 1611, never to be seen again. In the following year, Sir Thomas Button, with Prickett and Robert Bylot (another member of Hudson's crew) again entered Hudson Bay, and, after touching Southampton Island, wintered at the mouth of the Nelson River, where many of the crew died. In 1615, Bylot and William Baffin took the bark *Discovery* on her fourth trip into Hudson Bay and travelled along the Foxe Basin coast of Southampton Island. This short expedition was on its way home early in August and reported unfavourably on the great amount of ice met in this region, not knowing that Foxe Channel usually clears of ice in August and September.

In 1616, Bylot and Baffin made the most notable voyage to date when they circumnavigated the whole of Baffin Bay, and noted Smith, Jones, and Lancaster Sounds, again at an early season, since they left the bay on August 6 (O.S.)*. Unfortunately, the discoveries of this voyage were doubted by the map-makers, and it was not until 200 years later that they were proved substantially correct. It might have been expected that Baffin's voyage would bring a renewal of the quest for a northwest route, but it was not until 1631 that another expedition came into the region. Two ships entered Hudson Bay in that year; one under Captain Luke Foxe travelled along the west coast of Hudson Bay from Roes Welcome Sound to James Bay and also touched the west coast of Baffin Island at Cape Dorchester on Foxe Channel. Foxe's erroneous latitude for Cape Dorchester stayed on our maps for 300 years due to the inaccessibility of western Baffin Island. The other voyage of that year was under the command of Thomas James, who achieved nothing but a scurvy and cold-ridden winter on Charlton Island in the bay named after him.

The failure of these two voyages to find a route to the Indies through Hudson Bay dampened interest in the search. A new quest arose, however. French-Canadian voyageurs had travelled northward from Quebec to Hudson Bay, and M. Grosseilliers, impressed by the wealth of furs in that area, endeavoured to promote interest in France in the Hudson Bay route. The French King had read Captain James' disparaging account and declined support, but the English Minister in Paris thought otherwise and introduced Grosseilliers to Prince Rupert of England. Thus, in 1670, the Hudson's Bay Company was formed, with princely backing.

For a period, now, discovery was neglected. Ships sailed into Hudson Bay year after year, but they were seeking cargoes of furs and not illusive routes to the unknown northwest. The company prospered and expanded, but its monopoly irked other English merchants, and one named Arthur Dobbs challenged that "The Company avoided—making discoveries to the northward of Churchill—for fear that they should

discover a passage to the western ocean and tempt by that means the rest of the English merchants to lay open their trade".

Dobbs engaged Captain Middleton to command an expedition which reached Repulse Bay in 1742, and reported a "Frozen Strait" to the east and no hope of passage up Roes Welcome Sound. Dobbs refused to believe this and discredited the unfortunate Middleton by accusing him of accepting bribes from the Hudson's Bay Company. An aroused Parliament offered a reward fo £20,000 to the discoverer of a northwest passage, but this offer stood for the next hundred years.

Little progress in exploration was made in the Eastern Arctic during the latter part of the eighteenth century. (*1*) Wager Bay was explored to its head in 1747, and Chesterfield Inlet in 1762. Farther north two naval parties entered Baffin Bay but not beyond. On the mainland, Samuel Hearne of the Hudson's Bay Company travelled overland from Churchill across the Barren Grounds to the Arctic coast near the Coppermine River in 1771-72; and Alexander Mackenzie of the Northwest Company, in 1789, paddled down the great river named after him and also reached the northern coast.

Second Period—1818–1855

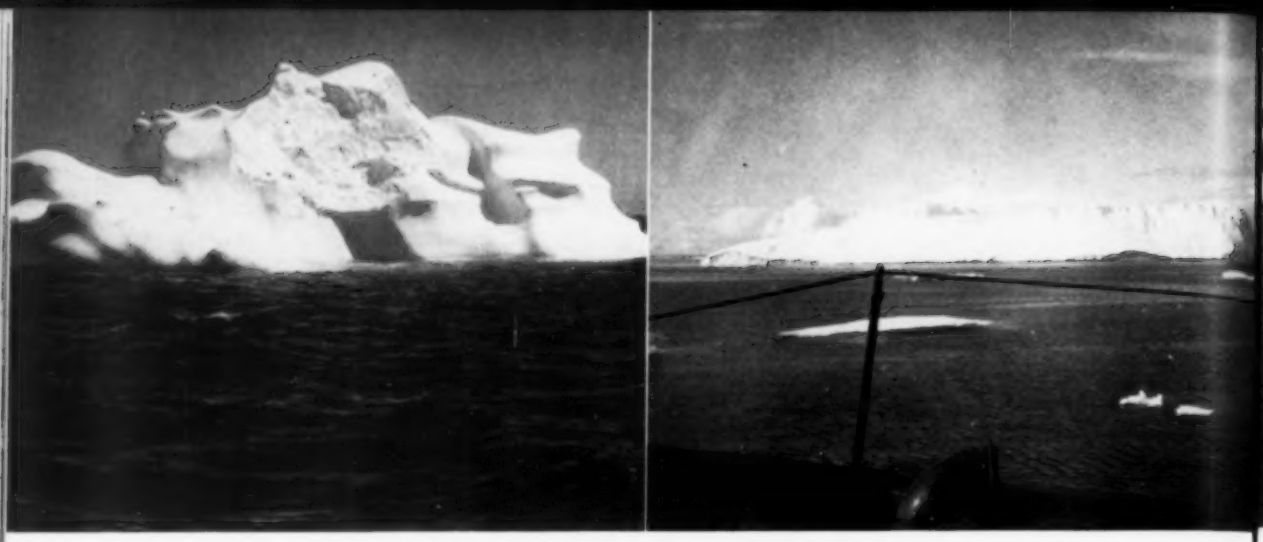
It is worthwhile reviewing the state of knowledge of America's Arctic coasts in 1818 as shown on maps of that time. Bering Strait was known as far as Icy Cape in Alaska, but, to the east, the coastline was merely a dotted line for eighty degrees of longitude to a point near Repulse Bay, with only two known localities indicated, "the Sea according to Hearne" and "the Sea according to Mackenzie", both as accurate as might be expected. The opening of Foxe Basin was east of Repulse Bay, its northern limits undefined, and Baffin Island was completely divided into three islands by Cumberland and Frobisher "Straits", which were thought to be continuous passages of water. Northwest of Baffin Island and north of the 70th parallel was blank. (*2*)

The end of the Napoleonic Wars found the British Navy triumphant, manned by experienced sailors, and well outfitted to continue the search for a northern route through the sea reported north of America. Many famous names occur from year to year, (*3*) and serving on the four ships which sailed in 1818 were John Ross, Edward Parry, F. W. Beechey, George Back and John Franklin. John Ross, accompanied by Parry, went to Baffin Bay, following the route taken by Baffin 200 years previously. He identified the latter's landmarks, but also regarded the three main sounds leading from Baffin Bay as closed inlets. Ross then sailed south along the northeast coast of Baffin Island, mapping carefully as he went and naming the capes and bays. Much of this coastline is still charted as this expedition reported. He reached Cumberland "Strait" by October 1, but the season was too advanced for further exploration and he did not enter this supposed passage. When Ross returned home, Sir John Barrow, Secretary to the Admiralty, and leading promoter of the renewed quest, accused him of negligence in investigating the sounds, especially Lancaster, and next year sent Parry to explore this route.

Edward Parry was undoubtedly one of the great Arctic explorers and navigators. (*4*) He developed a sound wintering technique which overcame both apathy and scurvy, and made spring sledge journeys which opened up new land territory. By this time ships had improved in size and strength, and

*O.S. Old Style Calendar. This should be August 16 by the present calendar.

Chart of the Eastern Arctic showing the extent of knowledge in 1662.



Icebergs off the Baffin Island coast

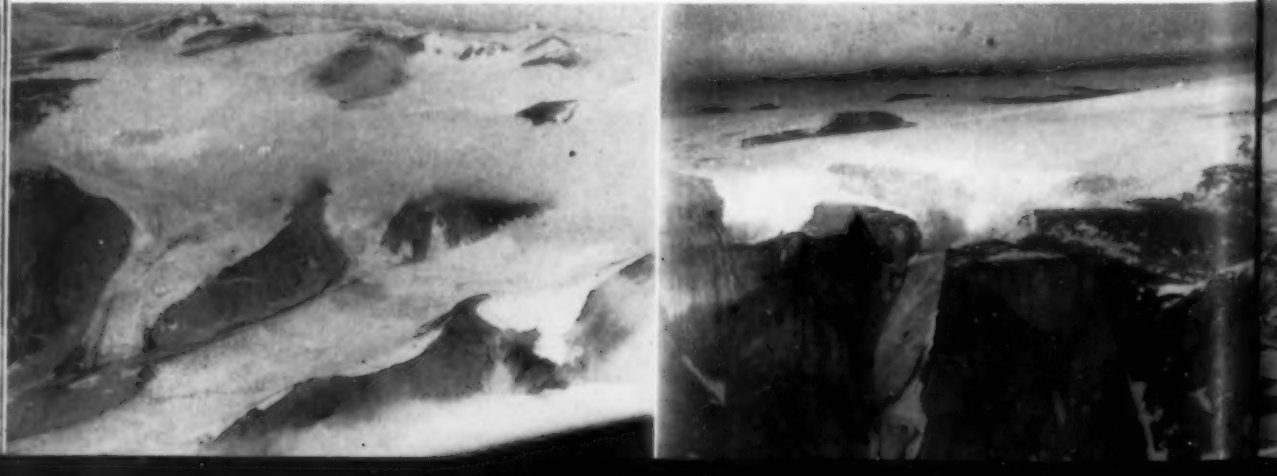
a whaling fleet of considerable size was then operating yearly in Baffin Bay. Despite these advantages, one of the serious problems which confused the early navigators was the unreliability of their magnetic compasses due to the proximity (then unknown) of the North Magnetic Pole on Boothia Peninsula.

Parry's first voyage entered Lancaster Sound and reached Melville Island before wintering, thus winning £5,000 for the first crossing of the 110th meridian. Next season ice coming from the west prevented any further advance in the passage. In 1821, Parry attempted another route by entering Hudson Strait and followed the east coast of Melville Peninsula in Foxe Basin to Igloolik. Here, ice in Fury and Hecla Strait again blocked his progress. Parry spent two winters in this region and includes in his journals much of interest about the Eskimo of the Fury and Hecla Strait area. Parry tried a new route again in 1824 on his third voyage. After a difficult voyage across the North Altantic, he entered Prince Regent Inlet, south from Lancaster Sound, and wintered on the Baffin Island shore. He crossed the Inlet in July 1825, but the *Fury* was wrecked off Somerset Island, and both crews had to return home on the *Hecla*.

Further attempts by way of the Foxe Basin route also failed. In 1824, G. F. Lyon, who had been with Parry on his second trip, failed to make any new discoveries in the *Griper*, and Captain Back, who had already completed three great overland expeditions in the Mackenzie District, was also defeated by the ice in 1833. His ship, the *Terror*, was frozen in and spent nine months of winter drifting helplessly along the northeast coast of Southampton Island before being released in Hudson Strait in July.

Mountain peaks and glaciers of Cumberland Peninsula, north of Pangnirtung.

The ice-cap above the west wall of Pangnirtung Pass



Loose, scattered floes in Hudson Strait in mid-July.

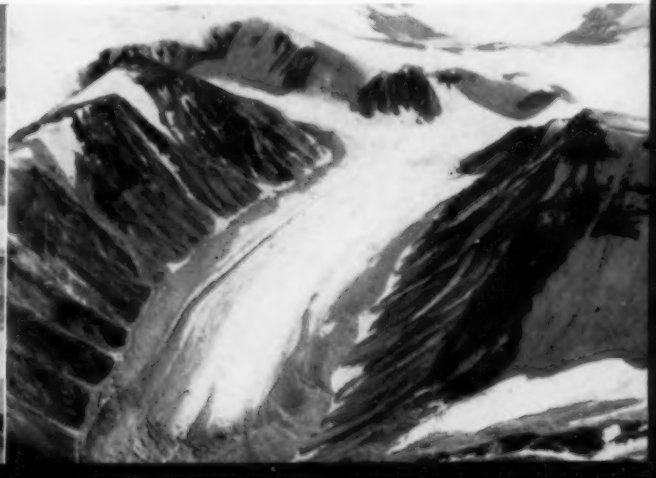
R.M.S. Nascopie surrounded by ice-floes in Eric Cove, Wolstenholme, in late July.

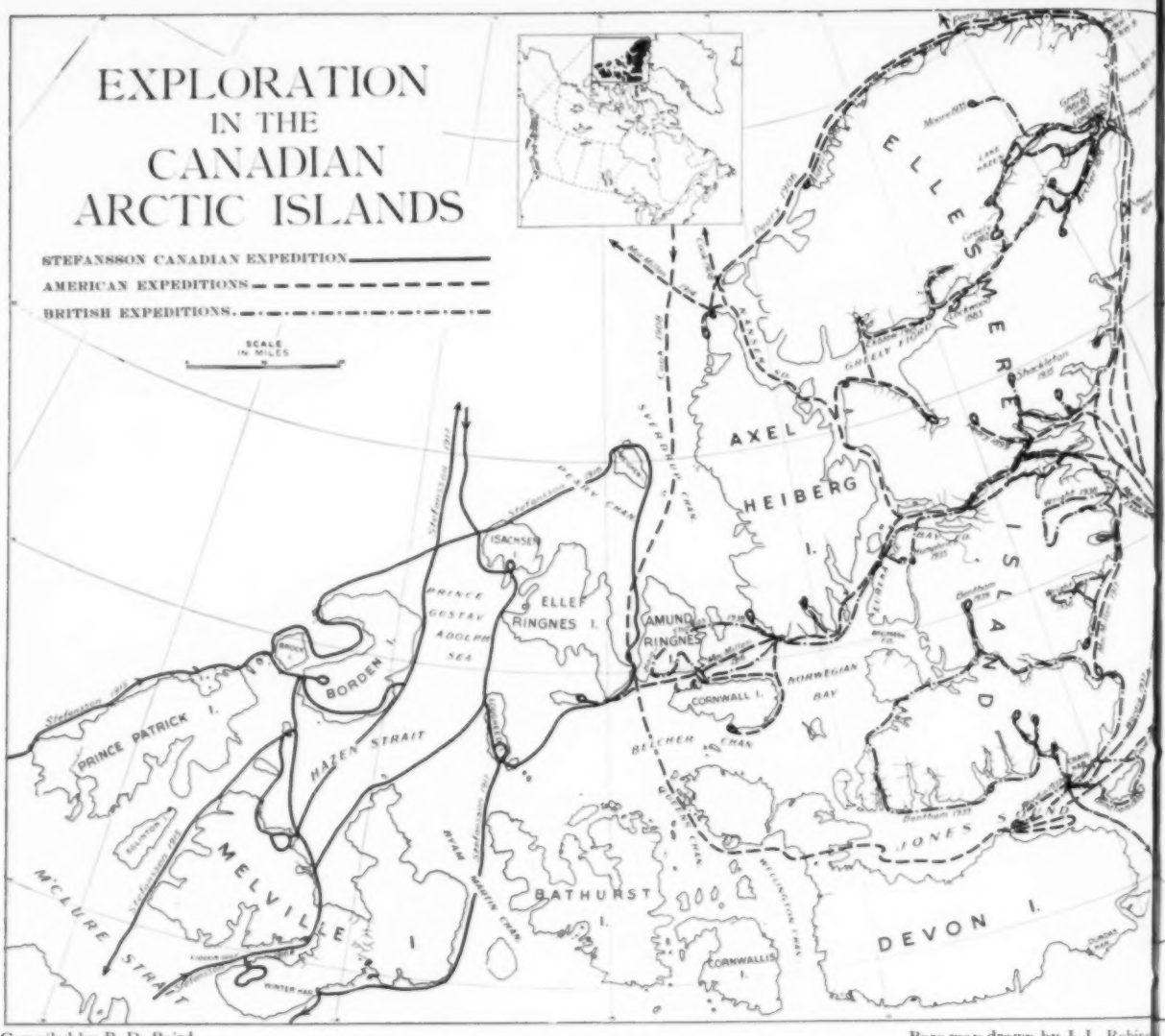
Meanwhile, John Ross renewed his Northwest Passage search in 1829. His ship, the 150-ton *Victory*, was powered by auxiliary steam, but the engine proved of little assistance. He entered Prince Regent Inlet easily in mid-August and renewed his supplies from the wreck of the *Fury* on Somerset Island. As he sailed south he missed the entrance to Bellot Strait, now marked by the trading post of Fort Ross, although he actually stopped at Brown Island at the mouth of the strait. Winter quarters were established at latitude 70 on the east side of Boothia Peninsula. Noteworthy winter travels were made by James Ross, the commander's nephew, who reached beyond the northerly point of King William Island, and later sledged to the site of the North Magnetic Pole. During the summer of 1830, John Ross was able to move his ship only three miles, and, in the following year, the ice remained fast about the vessel throughout the whole season. Ross abandoned the *Victory* in the summer of 1832 and moved to the northern end of Prince Regent Inlet in small boats. Moving ice again stopped them and the party returned to Fury Beach where they spent a fourth winter. The hardy crew moved again in 1833 and were finally picked up by a whaler in Lancaster Sound and taken back to England. Ross's voyage established the certainty of a peninsula extending north from the mainland of Canada and discouraged all hope of a passage through this region.

The next episode is the oft-repeated story of Sir John Franklin's tragic expedition of 1845, which disappeared south of Barrow Strait. (5) The important results coming from the Franklin expedition were achieved by the numerous parties which searched the Canadian Arctic for the unlucky Franklin.

Snow-capped mountains of Cumberland Peninsula, near Inglis Bay. Picture taken in August.

Typical mountain glacier flowing into Kingnait Pass, east of Pangnirtung. Photos by Eric Fry





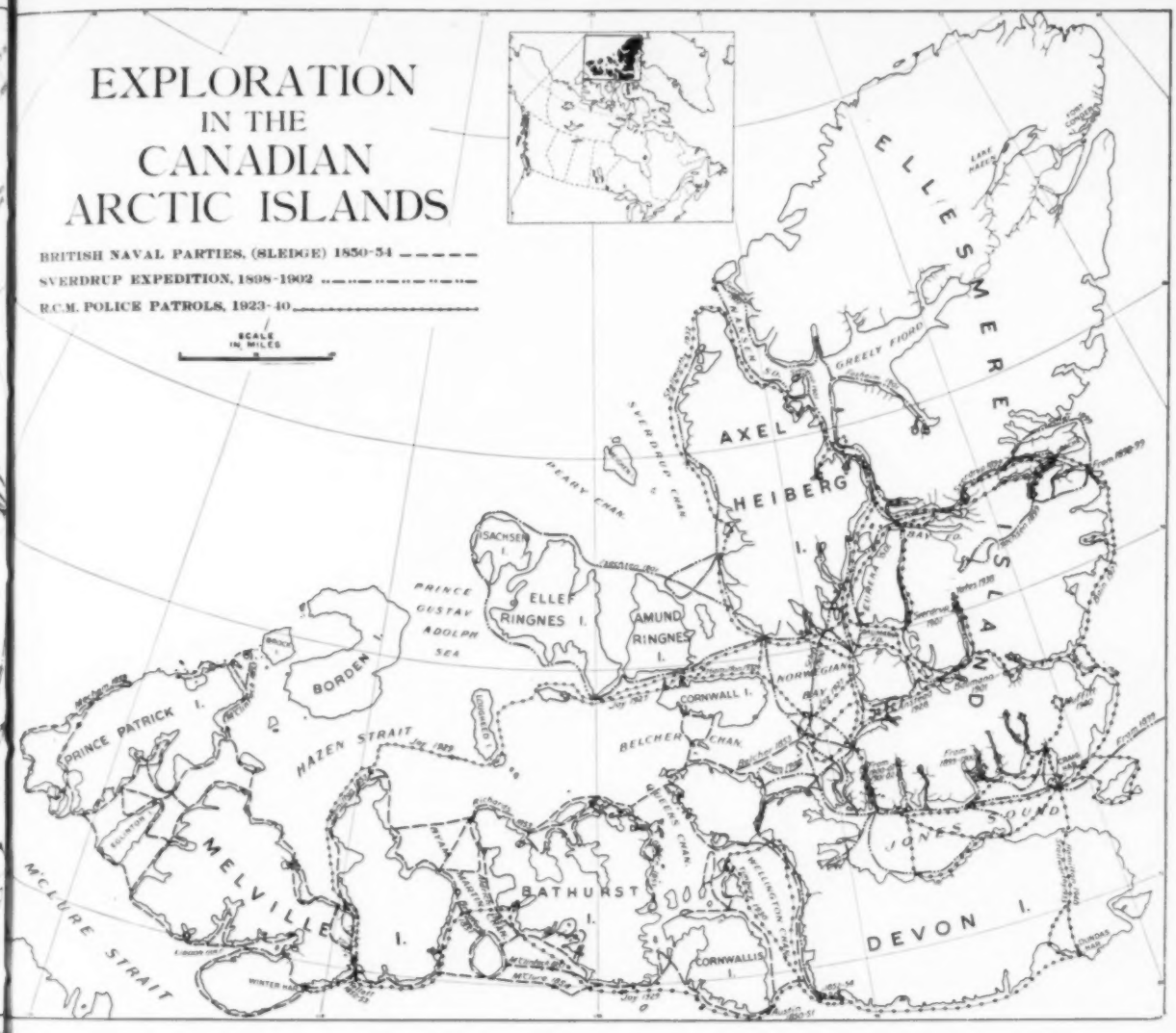
Compiled by P. D. Baird

Base map drawn by J. L. Robins

Exploration in the Canadian Arctic Islands (Stefansson, American, British)

It is estimated that 6,000 miles of new coastline were discovered in Canada's Arctic Islands; Smith Sound was penetrated as far as Kane Basin, and Jones Sound and Wellington Channel were explored. (See map p. 143). Many ships wintered in the Arctic and long sledge trips, totalling over 40,000 miles, were taken in spring when the land-fast ice linked the islands together. Occasional use was made of the dog-team, but most of these journeys were in regions where no natives lived, and the searchers developed their own technique of hauling their sledges by man-power. Of the many famous names of this period, now commemorated on the present maps of this area, Leopold M'Clintock was one of the most widely travelled. He crossed Melville Island and discovered Prince Patrick Island beyond, and, in 1859, it was he who returned from Bellot Strait with some definite news of the Franklin party's fate, verifying John Rae's clues.

A Northwest Passage was finally found when Captain Robert M'Clure, a member of Capt. Richard Collinson's Franklin search expedition, succeeded in travelling partly on foot and partly by sea from Bering Sea to the Atlantic. M'Clure entered the Arctic from the west in his ship the *Investigator* and disappeared north of Banks and Victoria Islands. After spending three winters with their ice-bound ship in Mercy Bay, Banks Island, M'Clure and his crew abandoned the *Investigator* and sledged to Dealey Island



Exploration in the Canadian Arctic Islands (British Naval, Sverdrup, R.C.M.P.)

where they met Capt. Kellett in the spring of 1853. Next spring they sledged eastward to Beechey Island and from there were taken by ship to England.

Third Period—1855-1914

The geographical information which resulted from the Franklin search expeditions brought the realization that there was no practical navigational route through the Arctic Islands. Fresh incentive to the penetration of the Eastern Arctic came from other sources—the competition to reach the North Pole, the whaling industry, and, finally, the interest of the Canadian Government in establishing sovereignty over the Arctic lands which she inherited from Britain. In the field of exploration one main avenue remained to be followed. This was the far northeastern area which became the route for polar expeditions culminating in Peary's final journey to the North Pole in 1909. (*6*)

United States' interest in the Eastern Arctic was roused by the journey of an American, Elisha Kane, into Kane Basin in 1853 while engaged in the Franklin search. Dr. Hayes, Kane's surgeon, returned to the Arctic in 1860 and, after wintering on Greenland, explored sections of the Ellesmere Island coast. In 1871, C. F. Hall, who had had previous Arctic experience in the Frobisher Bay and Repulse Bay areas, was encouraged by the United States Government to reach the Pole by this route. His

Eskimo dog-team and komatik, Lake Harbour, Baffin Island

vessel, the *Polaris*, reached latitude 82° before returning to winter quarters, where Hall's death ended the expedition.

The British Government took up the challenge of the Pole and, in 1875, dispatched a powerful expedition under Captain Nares to explore the Ellesmere Island route. A valuable series of papers on past Arctic experiences and methods was compiled for this expedition, but many of the lessons were not heeded. (*7*) Sledges were still man-hauled and scurvy took its toll. Nares' ship, the *Alert*, went into winter quarters 15 miles north of Hall's "farthest north" at the edge of the Polar Sea. His sledge parties reached 83°20′ in the direction of the Pole, and explored the whole northern shore of Ellesmere Island. (See map p. 142).

In 1881, the first Polar Year, a world-wide organization of northern stations was set up by various co-operating nations. The United States made a major contribution when Lt. Greely established a base at Fort Conger on northern Ellesmere Island. Journeys made from here included a "farthest north" on the Greenland coast and a crossing of Ellesmere Island to Greely Fiord. When the relief ships failed to get through the pack-ice after the second winter at Fort Conger, Greely's party made a disastrous retreat to Cape Sabine, near Bache Peninsula, where, in the summer of 1884, only seven survivors were picked up.

The Norwegian expedition under Otto Sverdrup made the largest new discoveries in the far northern Arctic Islands in 1898 to 1902. (*8*) Using the *Fram*, in which he had previously drifted across the Polar Sea with Nansen, Sverdrup spent four winters in different harbours in Ellesmere Island. His expedition mapped much of the western coast and discovered several large islands and many small ones, now called the Sverdrup Group, west of Ellesmere Island. The Norwegian flag was raised in this area, and it was not until 1930 that the Norwegian Government formally acknowledged Canadian sovereignty over the islands in question.

The remainder of this period's story of far northern exploration deals with the Peary-Cook struggle to reach the North Pole first. (*9*) This Arctic controversy need not be revived and regardless of whether either was successful, Robert Peary certainly deserved the attainment of his goal. Peary's several attempts, reaching farther each time, his brilliant tactics in travel by Eskimo methods—dog-teams, igloos and fur-clothing, all bring great credit to him as an Arctic explorer.

Although the spirit of pure exploration extended our knowledge of far northeastern Canada, it was commerce and government which helped to fill in many of the blanks farther south. In the early part of the nineteenth century, the whaling industry had shifted from the Greenland Sea to Baffin Bay. (*10*) As the value of whale-oil fell, that of whalebone increased until it reached $10,000 a ton in 1900, and a single whale yielded a season's profit. The right whales were hunted to near extinction, and, by the 1880's, the number of whalers was declining. The end came in 1905 when a substitute for whalebone was invented. The whalers came mainly from two local areas: the ports of Scotland and from New England. Their methods were rather different: the Scottish whalers had larger vessels, later steam-powered, and usually completed their operations in a summer season in Baffin Bay; the Americans used small schooners and soon developed a practice of wintering in Hudson Bay to obtain early season fishing before Hudson Strait was navigable.

In 1860, the first two American whalers wintered in Hudson Bay, and the next decade was a period of great activity for the industry in this region. The whalers manned some of their small boats with Eskimo and traded with them during the winter, so that their impact on native life was considerable. As whaling declined, many of the old timers remained as traders. Captains Comer, Mutch, and Murray are names that are well known in the Eastern Arctic, and, after the Great War, the Hudson's Bay Company employed some of the old whaling skippers as post managers in their newly opened trading posts.

Regular winter whaling stations were also operated in Cumberland Gulf until the early years of this century. Those of Kekerton and Blacklead Islands were eventually taken over by Mr. Crawford Noble of Aberdeen, and the owner's son made a few inland hunting trips which provided an early knowledge of the interior of Baffin Island. Kekerton was the headquarters of the famous German (later American) anthropologist, Franz Boas, who did the field work, in 1883-84, which established his reputation as a great authority on the Eskimo. (*11*) Blacklead Island was the scene of the first Anglican missionary establishment, founded by Dr. E. J. Peck in 1894, and was also the base for Bernard Hantzsch, the German explorer who travelled across Baffin Island and died on the unknown west coast in 1911. (*12*)

In 1880, the young nation of Canada awoke to the fact that her northern boundaries were vaguely defined. Accordingly, at her request, the British Government confirmed the transfer to the Dominion of all the Arctic Islands adjacent to the Canadian mainland. The view of international law is that title to lands cannot rest solely on discovery, but must be followed by some

First aerial pictures of recently-explored west coast of Baffin Island

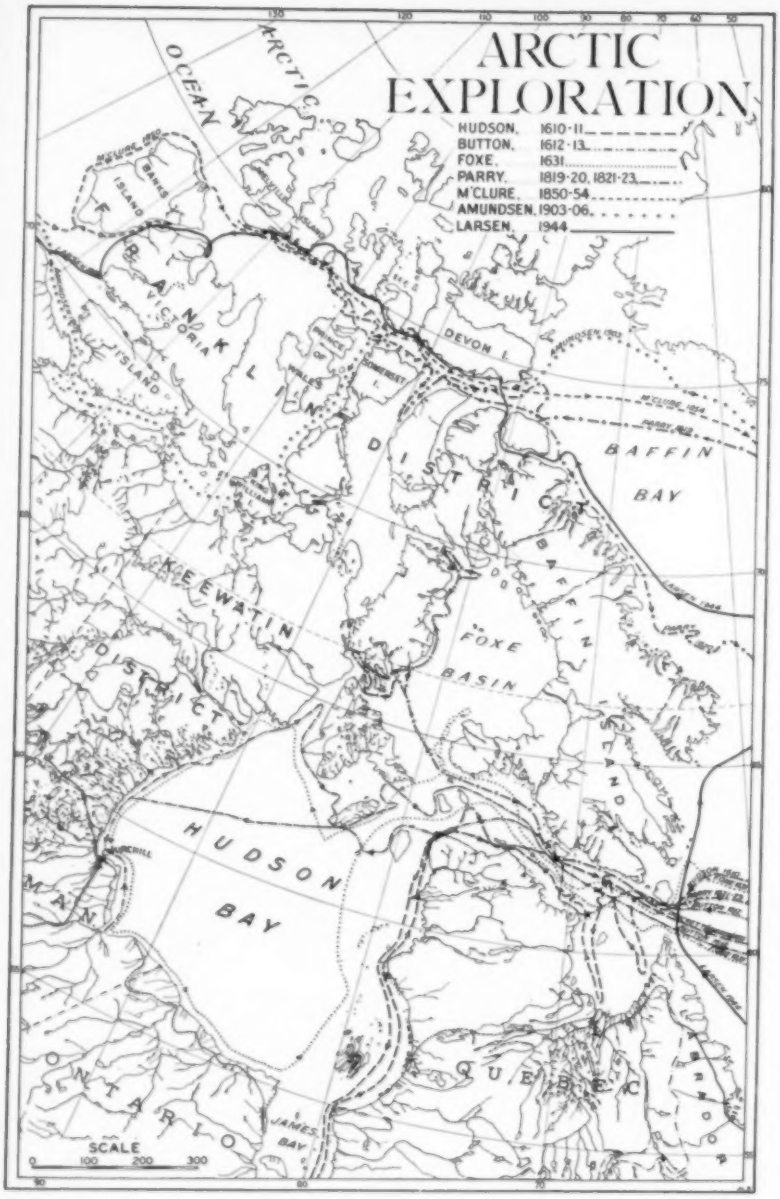
Top to bottom:
Low, rocky interior east of Nettilling Lake. Stranded ice-blocks dot the shallow shore.

Low, swampy coast south of Koukjuak River, western Baffin Island

Looking southeast across the lake-dotted plain towards Nettilling Lake.

Topographical Survey camp on grassy tundra plain near Amadjuak Lake

Photos by John Carroll



Arctic exploration (routes of seven Arctic explorers)

kind of occupation. Canadian expeditions which asserted and maintained this sovereignty were soon sent out by the Canadian Government.

The first Dominion parties were concerned with the investigation of the Hudson Bay route. Sea-borne expeditions went north to Hudson Strait in 1884, 1885, and 1886, and maintained meteorological stations at several points during the two intervening winters. Dr. Robert Bell, of the Geological Survey, investigated geology during the first two of these trips, one of which discovered the lofty Ottawa Islands off the east coast of the Bay. The reports of the expeditions suggested a certainty of navigation through the Hudson Bay route from the first week in July until the first week in October, and the commander recorded preference for Churchill over Fort Nelson as a terminal for the projected railroad to Hudson Bay. In 1897, the *Diana*, under Commander Wakeham, was sent to investigate earlier and later dates for navigation and, with Mr. A. P. Low, of the Geological Survey, collected specimens of fish and plankton. (*13*) The next government expedition was the first of several wintering parties in the *Neptune*, commanded by A. P. Low. This party spent the winter of 1903-04 at Cape Fullerton, a long-frequented whaling station northeast of Chesterfield, and the following summer sailed to Ellesmere Island, and Beechey Island, in Barrow Strait. (*14*)

In 1904-05, the *Arctic*, under Captain J. E. Bernier, wintered at Cape Fullerton with a Royal Northwest Mounted Police detachment (now R.C.M.P.). In 1906, a series of three wintering expeditions was started in this famous vessel under the same commander. Winters were spent at Albert Harbour (near Pond Inlet), Winter Harbour (Melville Island), and Arctic Bay (northern Baffin Island). The first of these voyages was almost wholly concerned with asserting sovereignty and little scientific work was accomplished. On the second voyage, 1908-09, the geology of Melville Island was studied by J. G. MacMillan and biological collections were made. Winter journeys included one on foot across M'Clure Strait to Banks and Victoria Islands. (*15*) On the third voyage J. T. E. Lavoie investigated the geology of Brodeur Peninsula and made two long journeys by dog-team; one down Admiralty Inlet, and the other to a point

north of Agu Bay on the Prince Regent Inlet coast. The *Arctic* called at Pond Inlet on her outward voyage, and one of the ship's officers reported a discovery of gold. This unfounded rumour caused three schooners and parties to return next year (1912) to prospect, one of them commanded by Captain Bernier. Although no gold was found, the first white crossing of Baffin Island in this area was made by A. Tremblay with two Eskimo companions when he sledged across to Igloolik.

On the west side of Hudson Bay, exploratory mapping and reconnaissance geology was done at the turn of the century by the Tyrrell brothers, J. W. and J. B., of the Geological Survey of Canada. (*16*) The Western Arctic was linked with the eastern region in 1903-06 when R. Amundsen finally accomplished the Northwest Passage by sea in one vessel, the small 47-ton *Gjoa*. The Western Arctic regions of the mainland and archipelago were given further attention when several Canadian scientific and exploratory parties did valuable work under the leadership of V. Stefansson, 1908-12 and 1913-18. No further Dominion Government expeditions were sent to the Eastern Arctic until after the first Great War.

Fourth Period—1914 to Present

Within the modern period the character of expeditions to the Eastern Arctic has changed. Pure exploration, which added new lines to the map, has yielded place to a more detailed scientific search for knowledge. The outline of developments in recent years will thus be given a different treatment to illustrate scientific achievements and point out the scope for future studies. (*17*)

Recent investigation of the Eastern Arctic has been aided by the fact that a small permanent white population came into the region within this period and was serviced by dependable water transportation. The Hudson's Bay Company had been sailing ships through Hudson Strait for over 200 years before they finally established trading posts there. Beginning in 1909 at Wolstenholme, the Company began pushing the trading business with Eskimo and soon had posts scattered throughout the Eastern Arctic. In 1912, the icebreaker *Nascopie* first entered the Eastern Arctic to carry supplies to the H.B.C. posts. Since then the sturdy ship has become an important part of the history of the region. In 1933, the *Nascopie* was chartered to transport the annual Canadian Government Eastern Arctic Patrol and continues to fulfil this dual role. The Royal Canadian Mounted Police also moved farther north and opened detachments at Pond Inlet and Craig Harbour in 1922. Additional detachments were established at Pangnirtung, in 1923, Dundas Harbour and Fram Haven in 1924, and the latter shifted to Canada's most northern post on Bache Peninsula, Ellesmere Island, in 1926. Meteorological stations under the Canadian Department of Transport have also been located at several of the Arctic centres. (*18*) Missionaries entered the Eastern Arctic to convert the Eskimo. The establishment of an Anglican mission in Cumberland Sound was previously noted, and the organization has

Routes of Eastern Arctic Patrol, Topographical and Geodetic Surveys

The sharp, snow-covered peaks of the north coast of Bylot Island. Note the broad glacier on the right.

expanded, now having eight mission stations. The Oblate Fathers of the Roman Catholic Church also extended their missionary work to the Eastern Arctic and have ten mission centres.

The size of modern expeditions has greatly decreased. Frequently one finds a small group of men skilled in their own pursuits, or an individual with a special line of research, visiting the Arctic for a single summer season, or for several years at a time. It is believed that the best scientific work can be done by wintering parties—not because of the winter, in which little activity except mapping is possible—but because men are on the ground in spring before navigation of the seas begins, and ready to take advantage of the snow-free ground and the biologically fruitful period.

Two of the special exploratory and scientific parties which have increased our knowledge of the Eastern Arctic should have special mention, although their scientific results will be detailed later. One was the well-organized, excellent Danish Fifth Thule Expedition, which spent the years 1921-24 in the Canadian Arctic under the able leadership of Knud Rasmussen. (*19*) The other was organized by T. H. Manning, a young British scientist, with previous Arctic experience on Southampton Island, to explore the Foxe Basin area beginning in 1936. Many new discoveries and valuable data were brought out by this party and by individuals of the expedition who returned to the area later. (*20*) Manning remained in the region after his expedition finished its work in 1937 and, accompanied by his wife, continued his explorations in western Baffin Island until 1941.

Numerous summer expeditions have entered the Eastern Arctic by ship, accomplishing reconnaissance work on trips covering a large area with limited halts. Such has been the characteristic of the annual Canadian Government Eastern Arctic Patrol which was inaugurated in 1922 to oversee the Eskimo population and has expanded in the last decade to include a scientific personnel. (*21*) Many scientists from various fields have accompanied the patrol to the Arctic posts and have been able to do useful work in their short periods ashore. Other cruising expeditions have been led by J. M. Wordie in 1934 and 1937, and several American parties have travelled by schooners under the command of Captains Robert Bartlett and Donald MacMillan, both former lieutenants of Peary.

After centuries of attempts and failures, the dream of navigating the Northwest Passage in one vessel during a single season was finally realized in 1944 by Sub-Inspector Henry A. Larsen in the Royal Canadian Mounted Police schooner, *St. Roch*. The sturdy little patrol vessel left Halifax in July, 1944, sailing north around Baffin Island and went through Lancaster Sound to Melville Island and thence south through Prince of Wales Strait into Amundsen Gulf. From there the *St. Roch* continued along the Arctic coast around Alaska and arrived in Vancouver in October, completing the history-making voyage in 86 days. Previously, in 1940-42, the 80-ton R.C.M.P. boat had been the first ship to make the passage successfully from west to east, but had been forced to winter at Walker Bay, Victoria Island, and on the west coast of Boothia Peninsula, before continuing through Bellot Strait to Lancaster Sound. (*22*)

The C.G.S. Arctic beset by ice off Baffin Island, July, 1925.

Mapping

It is now considered unlikely that any large new discoveries of land will be made in the Canadian Arctic sector. Additions and corrections to the existing coastline can always be made by small-scale surveying parties, but it seems likely that aerial photography aided by specialized ground-control parties will more rapidly fill in the details for future Arctic maps.

Several important modifications have been made in the present maps within the modern period. In southern Baffin Island, the work of J. D. Soper and the Putnam expedition of 1927 has altered the outline and filled in some detail of Foxe Peninsula. (*12*) The fiord region of eastern Baffin Island north of Cape Hewett was surveyed in part by two Cambridge expeditions of 1934 and 1937. The remaining unseen west coast of the island was finally mapped by T. H. Manning from 1938 to 1940. On Ellesmere Island and parts of the northern Archipelago, small additions to the map have been made by parties under Edward Shackleton in 1935 and David Haig-Thomas in 1937. The extensive Royal Canadian Mounted Police patrols, of which those of the late Inspector A. H. Joy were most notable, have also added new information. (See map p. 143).

More precise work has been carried out recently by official Canadian Government parties. C. H. Ney of the Geodetic Survey, on trips with the Eastern Arctic Patrol ship and auxiliary vessels, has accurately fixed the position of most of the posts and surveyed local sections. Since 1942 the Geodetic and Topographical Surveys have had several parties in the field spreading the ground-control points for future aerial photography. They have fixed positions in the interior of Keewatin District, northern Quebec, both coasts of Hudson Bay, and southern Baffin Island. (See map p. 147).

Geology

The main geologic features of the Eastern Arctic have been uncovered by geologists accompanying the various exploratory expeditions over many years. This information has been assembled by the staff of the Geological Survey of Canada, and will be incorporated in a new geological map of Canada, which will contain the best data available about the general geology of the Eastern Arctic.

Detailed geologic work has been done in only a few scattered places and further investigations may be profitable in several areas where there are known mineral possibilities. (*23*) Prominent workers in recent years have been L. J. Weeks (Cumberland Sound, 1926, and west coast of Hudson Bay, 1929-30), I. H. Cox (Akpatok Island, 1931), H. C. Gunning (east coast of Hudson Bay, 1933), and R. Bentham (southern Ellesmere Island 1936-39). The kindred subjects of geomorphology and glaciology have been

The old and new in Arctic transportation, Coppermine, 1931

studied by D. A. Nichols of the Topographical Survey during a series of trips on the Eastern Arctic Patrol, but much still remains to be known about the position and extent of the remnants of the Pleistocene ice-sheet which occupy areas in Baffin, Devon and Ellesmere Islands. (24)

Magnetism

The position of the North Magnetic Pole within the Eastern Arctic makes the study of magnetism an important one in this region. Notable work has been done by the Geodetic Survey of Canada and the Carnegie Institute of the United States. Dominion Government expeditions noted terrestrial magnetism effects in Hudson Strait in 1912, and from 1927 onward. In 1937, R. G. Madill of the Dominion Observatory carried out researches while a member of the Eastern Arctic Patrol, and the recent survey parties fixing ground-control points have added a great deal of new information concerning magnetic delinations and variations. The Carnegie Institute was behind Donald MacMillan's wintering trip to southwest Baffin Island in 1921-22, and, in recent years, has established an ionosphere station on another part of this island.

Botany

The botany of the Eastern Arctic has been well summarized by Nicholas Polunin in a booklet published by the National Museum of Canada. (25) In it he lists about 300 vascular species found in the Eastern Arctic and includes a useful history and bibliography.

R.M.S. Nascopie at anchor in Pond Inlet. The mountains of Bylot Island are twenty miles away in the background.

Botanical collections have been made by several expeditions. The one collected by the botanist on the Norwegian *Fram* expedition, 1898-1902, was one of the most important in the Far North. On Baffin Island, the work initiated by Dr. R. Bell in the last century has been ably continued by J. Dewey Soper and others. At points touched by the Eastern Arctic Patrol, plant specimens were gathered by the late Dr. M. O. Malte of the National Museum, who correlated most of the known information concerning the botany of the Eastern Arctic. On the western side of Hudson Bay extensive collections were made by the Canadian Government botanist J. M. Macoun, in 1910, and supplemented by later work of A. E. Porsild of the National Museum.

Rugged east coast of Bylot Island. Grounded iceberg on left and glacier from interior ice-cap on right

Akpatok Island rises as a flat-topped limestone block sheer above the ice-filled waters of Ungava Bay. Photo by John Carroll

Tides and Currents

There is an unfortunate lack of data concerning the movements of tides and currents in the Canadian Arctic Islands. Other than the 1908-09 record of the *Arctic* at Winter Harbour on Melville Island, very little is known about this natural phenomenon in the North. Future investigations, to supplement that done by the Russians on the Eurasian side of the Arctic Ocean, will aid in extending the world picture of tidal movements. Although most marine expeditions have reported on surface currents in the main straits of the Arctic, little is yet known about deeper ocean movements.

In Hudson Bay and Strait, research into oceanographical problems was carried on by the Department of Marine as well as the previously mentioned expeditions investigating the Hudson Bay route. In Davis Strait and Baffin Bay valuable data was gathered by the United States Coast Guard ship *Marion*. Its report accurately summarizes our present knowledge of currents and sea-ice conditions, including the movements of pack-ice and bergs. (26)

Marine Life

It is well known that the northern seas are rich in marine life but studies of habits and distribution have been curtailed by the inaccessibility of the region. Many of the expeditions have studied the larger sea mammals, but, because of the importance of these animals in the lives of the Eskimo, there is much more yet to be learned.

The possibility of commercial fish in Hudson Bay was investigated thoroughly in 1930 by an expedition of the Department of Fisheries, but none were found in quantity. A similar study of Baffin Bay should prove of some economic value. A report on the habits and kinds of fish found in the Eastern Arctic was submitted by H. M. Rogers who accompanied the patrol in 1937. Of basic importance to the study of habits and movement of seals have been the notes on plankton and food of seals, taken by M. J. Dunbar while a member of the patrol in 1939 and 1940. (27) Further investigation in this field may explain a great deal concerning the mystery of seal migrations.

Mammals

The mammals of the Eastern Arctic are of supreme importance to the human economy of the district and their distribution and

The "land" is chiefly water along the low, flat, west coast of Hudson Bay. Looking inland from near Tavani.

Fort Prince of Wales, near Churchill. Built by the British in 1734. Captured and partially destroyed by a French fleet in 1782.

Settlements in the Eastern Arctic

Left, top to bottom:

Cape Dorset, southern Baffin Island

River Clyde, eastern Baffin Island

Eskimo Point, west coast of Hudson Bay

Looking northward over mouth of Churchill River. Railway yards and Harbour's Board building of Churchill in foreground. Historic Fort Prince of Wales in distance

Looking southward over the town of Churchill, Manitoba.

conservation have been dealt with by publications of the Northwest Territories Administration. (28) Whereas nearly all expeditions have collected and observed mammalian life, the most important contributions to our knowledge have come from independent investigators sent out by the Dominion Government. They not only collected widely themselves but have included in their publications the results of other scientists who had visited the same areas.

The two most important of these special studies have been the work of C. H. D. Clarke and W. H. B. Hoare in the Thelon district of the northern mainland from 1928 to 1937, (29) and of J. D. Soper in southern Baffin Island from 1924 to 1930. (*30*) These reports, together with material assembled by R. M. Anderson in the booklet *Canada's Eastern Arctic*, give a useful summary of the species and distribution of mammals in the region. Ecological studies of certain animals have been conducted by means of a questionnaire on caribou and another on the white fox. The latter questionnaire includes animals related to the fox and its cycle such as the lemming, snowy owl, and dog. These results have been correlated mainly through the efforts of Dennis Chitty of the Bureau of Animal Population, Oxford University, who initiated the research in 1935 under the direction of Charles Elton. Smaller but important investigations have been made on Southampton Island by Sutton and Manning, and the latter has expanded the knowledge of Baffin Island's fauna by his journeys on the hitherto unknown section of the western coast. (31) The field notes of Peter Freuchen of the Fifth Thule Expedition provide information on the habits of animals in the North, and Magnus Degerbol also gives systematic notes on the results of this expedition.

Birds

The abundant bird life of the Eastern Arctic has always proven attractive to scientists, and much information is now at our disposal. The biological investigators sent out by the Dominion Government have again provided the most material, but countless small-scale collectors on every expedition, and local inhabitants such as L. A. Learmonth of the Hudson's Bay Company, have also made their contributions. Most of this work has been summarized by P. A. Taverner, who himself was on the Eastern Arctic Patrol in 1929. (*28*) Several other ornithologists, including representatives of the Ontario Museum, have also accompanied the patrol in recent years. Sutton on Southampton Island contributed valuable data for a local area, and Bray, who was with Manning in 1936, also added notable collections from Southampton and from Igloolik. (*32*)

The search to find the nesting locality of two species of geese well known in their wintering grounds was one of the most interesting problems of recent years. The Blue Goose nests were finally discovered by J. Dewey Soper in 1929 on western Baffin Island after a personal search that extended over a period of five years. Next summer Sutton found a few Blue Geese nesting on Southampton Island and from native ev-

idence interpreted the location of a colony in the southwest of the island which was later investigated by Bray and Manning. The latter extended the known breeding ground of the Blue Goose on Baffin Island as far north as Taverner Bay, and they have been seen in recent years in summer still farther north on Bylot Island. The mystery of the Ross's Goose, which vanished northeast of Great Slave Lake in summer, was not solved until 1940 when Angus Gavin of the Hudson's Bay Company discovered it nesting along the Perry River. (33) The fact that Blue Geese were also noted breeding there indicates that their range is much greater than was previously thought. It is possible that this whole area of the northern Keewatin interior is a great reservoir of migratory bird life.

Records and collections from the Arctic Archipelago and central northern coasts are still scanty and much work remains to be done. Northern ornithology is hindered by the fact that proper field studies must be done in one place and at a time well before navigation is possible. In the past this resulted in the necessity of a previous wintering in order to be in the area. An increased use of aircraft in the Eastern Arctic, however, may permit the landing of ornithologists at their chosen area shortly before the arrival of the breeding species.

Archaeology

The study of the native inhabitants of the Eastern Arctic began long ago with the first contacts by explorers. Of this group Captain Lyon was probably most sympathetic and made earnest attempts to study the language and customs of the Eskimo. More systematic work was done in the last century by Franz Boas, Lucien Turner, and Charles F. Hall. (*11*) The most thorough and extensive research was done by the Fifth Thule Expedition of 1921-24. Dr. Knud Rasmussen, the leader, himself part Eskimo from Greenland, spent three years traversing the northern shores of the continent, recording a wealth of folklore and customs at a lucky period just before the natives of this least accessible area began to be affected by encroaching white culture. (*19*) At the same time excavations done by Mathiassen of the Thule Expedition laid the foundation for later archaeological work in the Eastern Arctic.

Mathiassen's findings showed that the present Eskimo inhabitants of the Eastern Arctic were preceded by a people who depended much more on the larger sea mammals, especially whales, for their food, and who built stone and whale-bone houses. This type of culture has been called Thule in honour of the Danish expedition. (*34*) Subsequent investigators in the field, whose work has been correlated by Diamond Jenness of the National Museum, discovered a still earlier, and as yet little known culture, which is known as Dorset (the first specimens were brought to Major Burwash by natives at Cape Dorset, Baffin Island, in 1924). (*35*) Important sites of this culture have been located in Newfoundland by W. J. Wintemberg, in Hudson Strait by Douglas Leech-

R.M.S. Nascopie, historic Hudson's Bay Company icebreaker which also carries the annual Eastern Arctic Patrol.

A typical Department of Transport Radio and Meteorological Station, Arctic Bay, northern Baffin Island

Government doctor's residence on scenic Pangnirtung fiord

man—both of the National Museum, and at Igloolik by Graham Rowley. The exact origin of these people is still undetermined, but their artifacts are small and seem more suited to the hunting of land animals and smaller game than of larger sea mammals. Other recent archaeological efforts have come from R. Bentham in southern Ellesmere Island in 1938 and by G. I. Quimby in the Belcher Islands in 1939.

Much work remains to be done in the Arctic regions to determine the early history of the Eskimo. (*17*) Since it appears that these migratory people have spread from Asia across to Greenland in the past two thousand years, such Canadian work must be correlated with that done in other Arctic areas. Recent studies at the Bureau of Northwest Territories and Yukon Affairs have determined the present camp-sites and general distribution of the Eastern Arctic Eskimo population and this can be extended to include all Eskimo areas. (*36*) In order to protect the archaeological remains from tourists and curiosity seekers, the Northwest Territories Administration has instituted regulations which permit only trained archaeologists to do excavating work. Research can be done in several places, but the once-inhabited far northern islands and the central mainland coast seem most promising areas.

MEDICAL RESEARCH

Since 1922, investigations into the health and welfare of the native population have been carried on by the Dominion Government. One of the most notable early surveys was made by Dr. L. D. Livingstone in the Cumberland Sound and southern Baffin Island area in 1926-27. (*12*) In addition to the researches done by the resident government doctors in the mission hospitals at Chesterfield and Pangnirtung, a government

Surveyor John Carroll and a family of caribou-hunting Eskimo at Hantzsch River, western Baffin Island. The natives are of very short stature.

doctor always accompanies the Eastern Arctic Patrol and reports on Eskimo health conditions at each post visited.

Research work on the metabolism of Eskimo and their susceptibility to disease was carried on by Dr. Peter Heinbecker attached to the Putnam Baffin Island Expedition in 1927. He continued this type of work while attached to the Eastern Arctic Patrol in 1930 and 1931. (*37*) Dr. I. M. Rabinowitch of Montreal General Hospital was equipped with a complete biochemical laboratory and other apparatus when he accompanied the patrol in 1935. He later published articles on his clinical observations and metabolic and other studies. (*38*)

Conclusion

The present war has seriously curtailed most scientific research in the Eastern Arctic, but work that bears a military purpose has gone on, and, when peace comes, plans will be ready to resume the search for knowledge. The lure of the North and the undefinable attraction of forlorn Arctic regions will again call scientists, research workers, and explorers into the Eastern Arctic to unfold more of its fascinating mysteries.

Although protecting the North by requiring scientists' permits from any one entering the region, the Northwest Territories Administration has always encouraged organized investigation and particularly hopes to expand the scope of these researches in the post-war period. With the establishment of permanent research stations, and aided by modern methods of transportation and communication, the task should be easier and progress will be greater. The exploratory period, which was extended over a period of three centuries by the forbidding limitations of the natural environment, has now virtually passed, and the present era of organized, detailed investigation will provide Canadians and others with much additional information about the vast northeastern regions of the Dominion.

Top to bottom: Eskimo portraits of man, woman and youth at Port Harrison

Photos by Pierre Dagenais

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Eskimo women in winter clothing at River Clyde

Photo by S. Hluckan

James Williams Tyrrell

by CHARLES R. McCULLOUGH

HAMILTON was the home of those courageous souls whose adventures and discoveries in Canada's "Great Lone Land" make part of the epic of sub-Arctic history. James Williams Tyrrell was born of Irish parents in Weston, Ontario (then known as Canada West), on May 10th, 1863. His father built the "Old Mill" that still stands on the banks of the Humber. His distinguished brother, Joseph Burr Tyrrell, who was his companion on many journeys in the Far North, is an Honorary President of The Canadian Geographical Society. In due course young Tyrrell found his way to the School of Practical Science, was graduated from the University of Toronto with the degree of C.E., and entered upon his life work as surveyor, engineer, prospector and explorer. His experience embraced such important tasks as hydrographic surveyor in the Hudson Bay Exploring Expedition sent out by the Canadian Government in 1885-6; surveyor, in 1893, with the J. B. Tyrrell Expedition commissioned by the Geological Survey of Canada—Lake Athabaska to Hudson Bay; in 1900, surveyor-in-charge of the party sent out to make a survey from Great Slave Lake to Hudson Bay via Chesterfield Inlet; five years later, in charge of a survey from Lake Winnipeg down the Nelson River to Split Lake, by the Little Churchill to the Churchill, and down that great, turbulent stream to Fort Churchill. These were some of his journeys and explorations in Northern Canada.

In addition to many articles and lectures, James Williams Tyrrell was the author of a book that is still recognized as an important addition to the literature of northern exploration, *Across the Sub-Arctics of Canada*. He belonged to that noble company of "very gallant gentlemen" of whom Larry Oates of the Scott Polar Party was a shining example. There is a chapter in his book that records some of the perilous adventures of those who travel in the Barren Lands. This was the expedition of 1893, one of the many occasions when the two brothers were fellow-explorers. The thrilling story of that expedition by canoe, sled and snowshoes, was illustrated with photographs by Joseph Burr Tyrrell and drawings by the Canadian artists Arthur Heming and John Sloan Gordon. That quality of "Courage all the way", which Barrie speaks of, was characteristic of this Canadian adventurer. He showed courage throughout a long and arduous life. He signally displayed it in those storm-swept, marrow-freezing hills in Canada's hinterland; he manifested it (as did his fellow-voyageurs) in their water-logged canoes on Hudson Bay when famine faced them and the ice-bound shore bared its teeth to every attempt to land.

In his later years James Williams Tyrrell had put together material for a book of reminiscences and records of travel by field and flood in our Northland and elsewhere, which still awaits a publisher. The manuscript and illustrations are in the possession of another engineering brother, Henry Grattan Tyrrell. When the paper shortage becomes less acute, it is to be hoped that this book may be put into print. It would doubtless throw light upon the traveller's life and experiences among the Eskimo, whose language, customs and skills he learned in two winters spent among them, his stay with the "Sourdoughs" of the Klondike, early prospecting in the Red Lake region, vacation trips to his beloved Lake of Bays, and so forth.

Here is a tribute paid him by a fellow-traveller in Northern Canada: "He was a tireless, cheerful and resourceful traveller—no difficulties discouraged him. When in the winter of 1900 he reached Great Slave Lake, where he had to transport his men and outfit to the east-end on ice, no sleds were available at the Hudson's Bay post (Fort Resolution), and no men available to make them. Tyrrell at once set to work to make them with his own hands, and made a good job of it—and the journey was resumed . . . With great physical strength and endurance, and unbounded energy, he never grumbled and was ever ready to help the other fellow over the rough spots incident to exploration in the wilds."

EDITOR'S NOTE BOOK

Peter Matthews, well-known British commentator, received his B.A. degree in modern history at Cambridge University, where he was a scholar of Trinity College. For four years Mr. Matthews was on the staff of the Royal Institute of International Affairs. (See also C.G.J. for January and March of 1944.)

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Arthur L. Neal, whose article, "Canada in World Trade", appears in this issue of the Journal, will already be familiar to readers of the Journal as the author of articles appearing in August, 1937, May, 1940, and April, 1941. Previously Chief of the External Trade Branch of the Dominion Bureau of Statistics, Department of Trade and Commerce, Mr. Neal is now Director of Economic Research at the Bureau. In 1944 he was honoured by being elected an Associate of the Mexican Society of Geography and Statistics after visiting that country as a representative of the Canadian Government.

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J. Lewis Robinson will also be well-known to readers of the Journal (see September, 1943, August and September, 1944, and February, 1945). Having obtained his B.A. at the University of Western Ontario in honour history, and his M.A. at Syracuse University, Department of Geography, where he taught freshman classes for two years, Mr. Robinson then continued with further graduate work in geography at Clark University, where he taught cartography and meteorology while working for his doctorate. He was recalled by the Canadian Government in 1943 to take over geographical work for the Bureau of Northwest Territories and Yukon Affairs, Department of Mines and Resources, Ottawa, in connection with which he has spent two summers doing field work in the Canadian Eastern Arctic.

P. D. Baird, F.R.G.S., is now engaged in winter exercises with the Canadian Army in British Columbia. He was born in England, and obtained his degree in geology from Cambridge University in 1933. While at Cambridge, Major Baird accompanied the Wordie Expedition to Greenland and Baffin Island in 1934. As surveyor on the party, he was responsible for much of the detailed mapping of the River Clyde area, Baffin Island. After graduation from Cambridge, he spent a year as geologist for a mining company in Sierra Leone, and in 1936 was a member of T. H. Manning's British Canadian Arctic Expedition to Southampton Island and Foxe Basin.

Major Baird spent the winter of 1936-1637 in the Eastern Arctic, and returned to this region in the summer of 1938 to continue individual exploration. He travelled along the little-known west coast of Foxe Basin and crossed Baffin Island to Pond Inlet. From there he conducted the first exploration of the glaciers and ice-caps in the interior of Bylot Island. With the outbreak of war in 1939, Baird returned to Montreal with the R.M.S. *Nascopie* and enlisted as a private in the Canadian Army. He was in Britain with the Canadians in 1940-1943, and, after receiving his commission, did instructing work in mountain and winter warfare in Iceland and Scotland. In the spring of 1944, Major Baird was seconded to the Bureau of Northwest Territories and Yukon Affairs to accompany the Eastern Arctic Patrol. He returned to his army duties in November, 1944.

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A. Stanley Deaville, Superintendent of the Postage Stamp Division in the Post Office Department at Ottawa, was recently elected a Fellow of the Royal Philatelic Society of London, England, in acknowledgement of his contributions to the study of British-North American philately. One of Mr. Deaville's duties is the direction of Canada's philatelic bureau, which has earned wide praise in the philatelic press as the best of its kind. (See also C.G.J. for September, 1936.)

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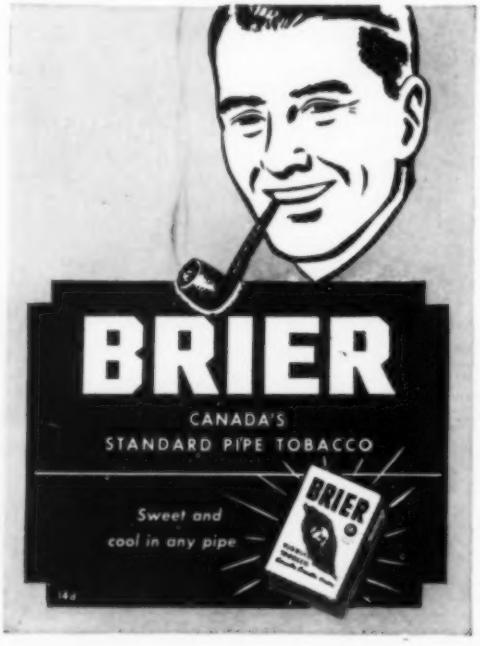
ANNUAL MEETING of

The Canadian Geographical Society

The Society will hold its sixteenth Annual General Meeting in the Lecture Hall, Victoria Memorial Museum, Ottawa, on Tuesday, March 20th, 1945, at 8.30 p.m. Immediately following the meeting, Major-General W. W. Foster, Special Commissioner for Defence Projects in Northwest Canada, and a Director of the Society, will deliver an illustrated address entitled "The Strategic Northwest", which will be accompanied by a sound film in technicolour.



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